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THE ETIOLOGICAL APPROACH TO THE STUDY OF DISEASE*

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In responding to the invitation to address you upon "The Etiological Approach to the Study of Disease," I find myself first faced by the necessity of defining what I mean when I refer to "etiology" and to "disease."

The word "etiology" has, as you know, been taken directly from the Greek word aitiologia, which means "an account of causes." What is a "cause?" We speak of "cause" and "disease" every day and with but little doubt as to what we have in mind, but how many of us have ever attempted actually and clearly to define them? To one who has given but little thought to the matter, the definitions might seem absurdly easy; they are, however, exceedingly difficult to state precisely.

Let us start with a consideration of the word "cause." In science "cause" is used to "denote an antecedent stage in a routine of perceptions" (K. Pearson); or as J. S. Mill put it, "causation is uniform antecedence." As science developed general notions or conceptions, the words "cause" and "effect" were withdrawn from the sphere of perception and utilized in the world of conceptions and ideas, "where, indeed, there is logical necessity but no true cause and effect." To quote Pearson again:—"It is only the very great probability deduced from past experience of routine that enables us to speak of the 'invariable order of the universe', or enables scientists to assert that facts which have hitherto proved obstinate will be ultimately embraced by the already well-established laws of nature. Not in the field of causation, but in that of conception do we deal with certainties." Thus, the word *know* should be used only of conceptions; the word *believe* should be used for perceptions, when we intimate that the same routine of sense impressions will recur! The necessity for this conception has been recently re-emphasized by the physicists who have worked experimentally in the realm of quantum phenomena and have been forced to the conclusion that "nature

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is intrinsically and in its elements neither understandable nor subject to law." If you will read the article by Bridgman in Harper's for March, 1929, you will see that Compton's discovery of the atomic structure of light has led to the formulation by Heisenberg of the "principle of uncertainty" since it has been found to be impossible to predict how an atom of radiation and an electron will behave after they collide. The physicists tell us that to them the discovery that nature is constituted in this way, and in particular is essentially unpredictable, has been enormously upsetting, for "the ability to predict a happening is tied up with our ideas of cause and effect." Some conclude that the universe is therefore governed by pure chance, that the world is not understandable by the intellect of man and that the very law of cause and effect ceases to have meaning!

Well, disturbing as these researches in the domain of the electron and radiation seem theoretically to be, we pragmatic American physicians are not likely to abandon too hastily the methods and conceptions that work well enough for our practical purposes and for increasing our understanding of "health" and of "disease." My discussion of etiology will, therefore, be based upon natural science conceptions of cause and effect as they were before Compton's discovery and Heisenberg's formulation of the principle of uncertainty, no matter how naive the physicists may declare me to be!

Descriptive science is made up of mental constructions that have their foundations in our sense-impressions. "Causal thinking" depends upon the construction of analogies of regular sequences of these sense-impressions. A lump of ice held in a warm hand melts. A man infected with malarial parasites and suffering from chills and fever gets rid of his symptoms and of the parasites by swallowing capsules of quinine. But mere invariable sequence or invariable coincidence is, of course, not enough to establish causal relationship. The fallacy of *post hoc ergo propter hoc* is well illustrated by the experience that "night follows day." When a patient recovers from pneumonia after taking a pint of whisky, we do not conclude that the whisky was the cause of the recovery. The fallacy of drawing causal conclusions from observation of positive *coincidences* while overlooking negative instances is very common among untrained thinkers. Some dreams come true, but most do not. Belief in telepathic communications appears to be based upon occasional coincidences, rather than upon true causal connections. Trench fever may occur in soldiers who also have pediculosis but no one regards lice as the cause of trench fever. Furthermore, in considering causal relationships, contradictions of reality dare not be ignored by the student of science; in mythology a god may give birth to himself and in the dereistic thinking of dementia praecox the finding of a piece of thread in his soup may make a patient conclude that the soup was cooked by a Miss Threadneedle! One agitated melancholic may feel sure that his occasional masturbation in childhood has brought ruin not only to himself but also to all who are near and dear to him; another may say that temporary tube feeding has permanently ruined his digestive organs and that the doctor who ordered it should be hanged and quartered! Obviously, a certain normality of the powers of perception and the powers of thought must be presupposed in those who search for what we physicians still speak of as "causes."

In the better textbooks on logic, the methods of ascertaining "causes" are variously described and the criteria for the judgment of causal relationships are catalogued. Most of you have had college courses dealing with these matters, and it is not my intention to enter upon any discussion of them now. I do desire, however, to comment upon the proposals that have been made (wholly aside from the new vision of science that the physicists insist upon) to discard the idea of cause from scientific terminology and to replace so-called "causal thinking" by so-called "conditional thinking."

It has been urged by a number of writers that any process in nature (say, for example, a disease-process) is never dependent upon a "single condition" or "cause" but always upon a large number of "conditions." It is, they say, all wrong to select one of these conditions only and call it the "cause" of the process. These authors urge, therefore, the abandonment of causal conceptions and the adoption of so-called "conditional thinking." Though it is true that many who deal with "causes" do so rather naively and vaguely, ignoring in a given instance the factors concerned other than those that they refer to as the "cause" of the process, I am in agreement with those who refuse to adopt any form of conditional thinking that would throw causal thinking overboard as useless or pernicious in our everyday

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work. As B. Fisher has well said "if there were only conditional thinking in existence, causal thinking would have to be discovered, for it is essential not only for theory but also for practice."

We know very well that the ordinary man in ordinary life designates as the *cause* of a process, or of an event, *that factor or factor-complex that is most important either for understanding its occurrence or for decision as to action.* Take, for example, a railroad accident following upon the wrong setting of a switch. A whole host of *conditions* are concerned in addition to the open switch; the speed of the train, the weight of the engine and the cars, the locality, the time, the obstructions met with, the psyche of the watchman and of the conductor are some of these conditions. Indeed, if all the conditions of an event are to be sought and catalogued, this conditional thinking would widen out into a history of the universe as a whole. Tennyson saw this when he commented upon the "flower in the crannied wall." But the ordinary man looks upon the railroad accident just referred to as due to the false setting of the switch; he calls it the *cause* of the accident and he is right, since it is *the most important condition,* the one that could and should have been avoided. Or, take another example, that cited by the conditionist Verworn himself, the death of an arteriosclerotic man from the administration of a quantity of methyl alcohol that would not have been fatal to a person whose arteries were not diseased. Verworn maintains that the causal mode of thinking is entirely helpless here. But as Fischer rightly objects, the cause of death in this case may differ according to the point of view of the investigator. From the lawyer's standpoint, the poisoning by methyl alcohol was rightly viewed as the cause of death, for though the amount given was not enough to kill a healthy man it was enough to kill the arteriosclerotic man and, from the legal standpoint, the poisoning of a sick man by a small dose is not allowed any more than the poisoning of a healthy man by a larger dose. Hence the most important factor in the death as far as the legal inquiry was concerned was the methyl alcohol poisoning; for the medical inquiry, the giving of the poison *and* the disposition (arteriosclerotic disease) were both important.

Do not these two examples make it very clear that both in ordinary life and in scientific investigation, causal thinking is necessary since it presupposes *an evaluation from the standpoint of the inquirer of the relative importance of the conditions concerned* in the origin of any given process or event?

The cause of an event may be one factor or condition for a physicist, another for a biologist, or still another for a jurist. Even for the scientific investigator, a cause ascribed at one stage of the development of his science may be different from that ascribed at a later stage of that development, and yet in both instances with right, for everything depends upon what is most important for understanding or for action from the standpoint of the inquirer at the time the inquiry is made. Though innumerable conditions are demonstrable in the origin of any occurrence, it is the specific conditions (determination factors of Roux) that are most important; next to these in importance are the conditions that are essential but not specific (realization factors of Roux); least important are the other conditions—those that are non-essential since they vary greatly without materially influencing the specific character of the process. It is, then, the determination factor or the realization factor that is to him of greatest importance either for explanation or for practice that is rightly designated as the "cause" by a given inquirer.

If these points be clearly kept in mind, there should be no quarrel between "causal thinking" and "conditional thinking." Without causal thinking, that is, without estimation of the relative importance of conditions from the standpoint of the questioner, time and effort must be needlessly squandered, theoretical knowledge must be retarded and practical action must be needlessly hampered.

DEFINITIONS OF "HEALTH" AND "DISEASE"

After this brief general discussion of "causal thinking" and of "conditional thinking" and before passing on to my main topic—the etiological approach to the study of disease—it would seem desirable to pause for a moment and to ask ourselves what we mean by "health" on the one hand and by "disease" on the other. Here, again, precise definition is far from easy, despite the fact that we all use these terms rather glibly, think that we know what we mean when we use them, and all too often fail to realize that they are terms that are rather loosely used and have entirely different limits in the minds of those who use them.

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It should in the first place be borne in mind that the terms "health" and "disease" are abstractions; we do not know health or disease as concrete realities for these terms refer to certain states met with in persons whom we regard on the one hand as healthy persons or on the other as diseased persons. But there are no two healthy persons who are alike and, accordingly, the states that we designate as health must also be different from one another. Again, the states that we speak of as disease are not alike in any two persons, even when these two persons suffer from what we call the same disease.

What then do we mean when we speak of a healthy person or of a diseased person? Certainly, we do not mean that the state of the average must be a state of disease; nor are we helped much by saying that the healthy person is a "normal" person and that the diseased person is "abnormal," for we then merely postpone the answer until after inquiry as to what is normal and what is abnormal.

I have studied carefully the definitions given by many authors; the most satisfactory, in my opinion, are those of Grote, who defines *health* as the capacity of the organism for adequate responses to influences in its surroundings and *disease* as inadequate responsiveness of an organism to influences in its surroundings. A sick person is one whose vital responses are inadequate to his biological needs. These definitions seem to me to be broadly conceived, but they obviously widen the conception of disease so as to include all forms of inadequate responsiveness — bodily, psychical and social.

EXTERNAL AND INTERNAL CAUSES OF DISEASE

Human beings are complex systems consisting of definite arrangements of energies and materials in space. Changes in such complex systems may depend partly upon external conditions, partly upon internal conditions. The external conditions that produce change are often spoken of as *stimuli;* these acting upon internal conditions result in so-called *reactions* or *responses.* In health, these reactions are adequate to the biological needs of the person; there is good adjustment of the internal and the external relations. In disease, the reactions are inadequate to the biological needs of the person; there is some maladjustment of the organism to its environment. Even when the disease-process leads to results that are ultimately beneficial to the person affected, there is temporarily, at least, some inability adequately to respond to certain biological needs.

Maladjustment may depend either upon an inimical environment or upon defects within the organism itself. Hence have arisen the idea of external causes of disease on the one hand and the idea of internal causes of disease on the other. We say that disease is due to internal causes when inadequate responses are observed in a normal average environment; and we attribute disease to external causes when the reason for inadequate response lies in the surroundings. Thus the inadequate responses of a child with congenital heart disease are due to an internal cause, whereas, the inadequate responses of a person suffering from malarial or typhoid infection or from phosphorus poisoning are due to external causes. In many cases of disease, however, perhaps in most, we have to deal with a combination of internal and external causes. For example, in persons whose structures and functions, either through inheritance or through earlier environmental injuries, are such as to give them the disposition to inadequate response to some external noxa, we must consider both the disposition and the exposition as important for the origin of the disease that develops. Thus one person, through inheritance, may have an inborn disposition to infection with tubercle bacillus; whereas, another person not born with a disposition to tuberculosis may acquire a disposition thereto through an attack of measles or of influenza. The internal causes of disease are sometimes spoken of as endogenous causes and the external causes as exogenous. An example of disease of the purely endogenous type is seen in the manic-depressive psychosis and an example of a disease of the exogenous type is seen in scabies.

During the second half of the last century, great progress was made in the study of disease due to exogenous causes through the development of bacteriology and parasitology; in the first quarter of the new century, our attention has been re-directed, with great benefit, to the internal causes of disease through the newer studies of constitution.

APPLICATION OF BIOLOGICAL CONCEPTIONS TO THE STUDY OF ETIOLOGY

Thanks to the influence of modern biology we now approach the study of the human individual in health and in disease in new ways. Realizing that every human

being develops from a fertilized egg-cell (or zygote), formed by the union of a paternal with a maternal gamete, and recognizing that this fertilized egg-cell gradually develops into a mature organism as a result of a series of reactions with energies and materials in the environment (intrauterine and post-natal), we understand that the developed organism (or *phenotype*) must consist of two fundamentally different parts:—(1) That derived from the two parents carrying with it all the inherited potentialities—the so-called *genotype*, and (2) that derived from the surroundings including the energies and substances that convert inherited potentialities into realities—the so-called *paratype*. The whole make-up of the realized organism or phenotype is often spoken of as its *constitution*, which accordingly consists of two parts, the inherited part or *genotypic constitution*, and the acquired part or *paratypic constitution*. What we call the manifestations of life in a human individual are therefore reactions of the phenotype with the stimuli that act upon it from without. When these reactions correspond to the biological needs of the person we speak of *health* of person; when they are not adequate we speak of *disease* or *anomaly*.

Now as I have said no two human beings are alike, for no two phenotypes are precisely alike and no two genotypic patterns are ever exposed to precisely the same environment. The only instance in which two genotypes are alike is met with in identical twins, where a fertilized egg-cell divides into halves and each half develops into a human being. But even these identical twins must be exposed to somewhat different environments, so that, though they are alike in genotypic constitution, they must be somewhat dissimilar in paratypic constitutions. The importance of the identity of the genotypic constitution in identical twins is, however, shown by the fact that, in many instances, such twins have been known to develop the same disease at approximately the same time in later life though separated from one another by a distance of hundreds of miles.

Though, as I have said, no two human beings are exactly alike, the differences may be entirely compatible with health. In other words, a high degree of morphological, functional, or regulatory *variation* may exist without the occurrence of disease. But when variation transcends certain limits, there is usually some special individual predisposition to disease, since excessive variation from the average type is likely to limit the powers of adaptation to the environment. Obviously, therefore, an intensive study of *personal biovariants* ought to be very important, since an acquaintance with them and with their corresponding dispositions to disease should be helpful in the development of methods of "special" as contrasted with "general" prophylaxis.

As examples of *morphological personal variants* I would mention the habitus asthenicus with its special disposition to tuberculosis, to undernutrition and to schizophrenia, and the habitus pyknicus (or habitus apoplecticus) with its special disposition to chronic arterial hypertension, to obesity, and to manic-depressive psychosis. As examples of *functional personal variants* (in whom there are differences in biochemical composition or differences in modes of chemical reaction), I might mention the gouty diathesis, and the exudative diathesis. And as examples of *regulatory personal variants* I would point to persons with endocrine disorders like acromegaly or exophthalmic goitre and to evolutive and involutive disorders like infantilism in which the developmental acme is delayed and like progeria in which the time of appearance of the phenomena of senescence may be premature.

As long as these personal variants (or so-called special biotypes) are adequately responsive, we do not say they are diseased. We speak of "disease" only when a person becomes inadequately responsive, that is to say, when his powers of adaptation become insufficient to his personal needs in the way of functional performance and endurance.

It will be clear I think that the biological conceptions to which I have just referred help us more systematically than ever before to investigate the causes of disease and the conditions that predispose to disease. In studying any single person, we must now pay attention both to his constitution and to his environmental situation; and in considering the constitution we bear in mind both the inherited or genotypic part and the acquired or paratypic part. A human being has *health of constitution* when he is capable of making adequate responses to ordinary external circumstances. Inadequacy of responsivity must be due either to faulty constitution, or to environmental situations that are too unfavorable, or to both. A man or woman with constitutional inferiority will react inadequately in situations to which

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persons of sound constitution will respond satisfactorily; but even a person with the soundest constitution may fail of adequate response in external circumstances that are over hostile. For either health or disease, many factors must co-operate; it is the total sum of conditions (internal and external) rather than any single factor that must be held responsible.

Medical research and medical practice in our time are being profoundly modified by the applications of these methods of study of human phenotypes and their modes of response. At the moment, investigations of human constitution stand in the center of medical interest. More attention is being paid to genotypic or inherited factors than formerly. We seek the origin of bodily habitus, of chemical tendency or diathesis, of intellectual power and of characterological trend of persons, in the genes that have been transmitted by forebears. Indeed, there may be some danger, just now, that the significance of environmental factors may be temporarily too much pressed into the background, except perhaps in the case of infections and parasitic invasions. The significance of extrinsic causes must never be neglected in our enthusiasm for research in intrinsic domains. It may be true, as someone has poetically put it, that the arteriosclerosis of later life is but "the end of a song that is sung in the cradle," but it is also possible, as many still think, that dietetic errors, physical and mental overexertion as a result of excessive environmental stimulation and, in general, the wear and tear of life are important in addition to a pyknic habitus, or, to a general or a regional vascular inferiority, of genotypic source. I am, however, greatly impressed with the frequency with which I meet with early arterial hypertension in certain families, as well as with the occurrence of angina pectoris or of hemiplegia at about the same age in father and son or in sister and brother. And, again, though constitutional factors may play a part in the origin of scurvy, of rickets, of beri-beri, and of pellagra, the most enthusiastic investigator of constitution will not deny that the obligatory condition in the origin of these maladies is the insufficiency of specific vitamins in the diet. Moreover, we dare not forget that one and the same disease may arise from wholly different causes or that certain disease states may depend upon the co-existence of several causes. I need only remind you of the etiology of bronchial asthma on the one hand or of obesity on the other to bring conviction on this point.

In the etiology of certain diseases there may be a whole series of links in the pathogenetic chain. Thus, the pathogenesis of the disease in which pernicious anemia appears, is not wholly explained by absence of certain substances contained in liver or liver extract; for, though the administration of liver abolishes the anemia, it does not cure the achylia gastrica, it does not prevent the degeneration in the posterior and lateral funiculi of the spinal cord, nor does it abolish the toxemia as measured by Macht's phytotoxic test.

As I said in the beginning of this address, however, it is by no means necessary to throw overboard "causal thinking" and to attempt to replace it by "conditional thinking" merely because several conditions may co-operate in the production of a given disease state. Even when we are compelled to admit that several conditions are concerned in the origin of a given disease, we will do well to attempt to estimate the relative importance of the several conditions and we are justified, always, in laying emphasis upon an obligatory condition and designing it as "cause." In the origin of tuberculosis, the tubercle bacillus is the obligatory condition; in scurvy, a lack of the antiscorbutic vitamin C in the diet is the obligatory condition; and in hemophilia, an inherited chemical anomaly of the blood is the obligatory condition. Though several other facultative conditions may be grouped around the obligatory condition (or "cause") as predisposing elements, we cannot afford, either from the standpoint of theory or of practice, to lose sight of the predominant significance of a single main factor.

THE APPLICATION OF SOCIOPSYCHOLOGICAL CONCEPTIONS TO THE STUDY OF THE ETIOLOGY OF DISEASE IN MAN

I have laid some stress upon the importance of modern biological conceptions for the study of etiology. Before bringing this address to a close I should like also to emphasize the significance of psychological and sociological conceptions for the study of inadequate responsivity in man. For in our time, particularly, we are greatly indebted to neurologists and to psychiatrists for opening our eyes to the importance of the thinking, the feeling and the striving of man, as well as of his social relationships, for an understanding of his modes of response, for an ex-

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planation of his maladjustments, and for clues for the practical management of persons who are psychoneurotic, insane, imbecile, delinquent, or criminal. The great intricacy of man's psyche, as well as the great complexity of his adjustments to a social as well as to a material environment, are responsible for an ever-increasing group of problems that physicians, better than anyone else in the community, are fitted to attack.

We are in these days learning much about the relations of bodily type to emotional trend and much about the relation of temperamental type to social maladjustment. In our studies of patients today we are compelled to familiarize ourselves with the psychical and social history as well as with the somatic history of those who come to us for help; and we are realizing more and more that a knowledge of intellectual capacity, of personality make-up, and of social or anti-social tendencies, is just as important for the explanation and management of inadequacy of response as is a knowledge of physical, chemical and bacteriological relationships. The practitioner of tomorrow, even of today, must find himself seriously handicapped without more than a fragmentary knowledge of the motivations of human conduct, of the desires that men strive to gratify, and of the intrapersonal and social conflicts that may arise during the struggle for the satisfaction of these desires. Researches upon instinctive tendencies, upon disharmonies in these tendencies, and upon environmental circumstances that prevent the fulfilment of legitimate human desires, are indispensable for physicians whose duty it is to help to promote the welfare of single persons as well as that of society as a whole.

Studies in these newer fields promise greatly to widen the domain of medical activities. From now on, it will be the duty of medical men to strive to discover the causes, the cure, and the prevention of inadequacy of response not only of the body but also of the mind and of the psychophysical unit as a whole. It is surprising how many practitioners, skilful as they may be in physical diagnosis, are lamentably lacking in training for the quick and safe recognition of evidence of feeble intelligence, of disordered emotional life, of faulty will, of tendency to social maladjustment, or of conduct disorder. And yet it is in these domains last mentioned that inadequacy of biological responsivity is fully as pronounced as in the functioning of the heart, of the liver, or of the kidneys. There is, it seems to me, every reason to believe, that human thought, human feeling and human behaviour are fully as definitely determined by inheritance and by environment as are the secretions of the glands or the growth of the hair and nails. It is difficult to understand how anyone who has had any considerable experience with the insane, the criminal, the psychoneurotic or even the malingerer, can hold any other view. At any rate, as in all other fields of medicine, most progress is likely to be made here by working *as if* this were true.

ETIOLOGICAL DIAGNOSIS AND ETIOTHERAPY

In making diagnostic surveys of human phenotypes whose responses to environmental stimuli are inadequate to their biological needs, it is desirable, after a complete analysis of the patient's life history and of his heredofamilial history and after thorough exploration of his structures and functions by physical, chemical and psychical methods, to synthesize the results from at least four different standpoints. First, the symptoms and signs should be surveyed from the standpoint of the clinical syndromologist who will recognize groups of symptoms, symptom-complexes, or syndromes that will help to establish the nosological position of the case (*symptomatic or syndromic diagnosis*). Secondly, the findings should be examined from the standpoint of organic structural deviations from the normal (so-called *pathological-anatomical diagnosis*). Thirdly, the data accumulated should be reviewed from the standpoint of function and regulation, an effort being made to determine in how far the disturbances can be referred to the activities of different tissues, organs, or organ-systems and to that of the whole psycho-physical unit or the total personality of the patient (so-called *pathological-physiological diagnosis*). And, fourthly and finally, the attempt should be made to arrive, as far as is possible, at conclusions regarding the obligatory and the facultative conditions that have led to the abnormalities discovered, in how far these can be located in the constitution (genotypic or paratypic), in how far they lie in environmental circumstances, and the serial sequence of the pathological events, that is to say the successive links in the pathogenetic chains (so-called *etiological and pathogenetic diagnosis*).

A comprehensive diagnosis such as this

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will afford the best clues for therapy (surgical, symptomatic, functional or regulatory, substitutive, and above all causal and conditional). When the etiology has been determined, the causes can sometimes be removed and the faulty conditions modified (etiotherapy). But even where the causes cannot be removed, much can often be done to help the patient through functional or regulatory attack. Moreover, purely symptomatic therapy also has its place and should never be neglected. In the planning of campaigns of prophylaxis, etiological factors are, of course, of predominant importance.

CONCLUSIONS

All advances in our knowledge of the etiology of disease, as in every other department of natural science, have come through accurate observation and through well-devised experimentation. Imagination is necessary and is as desirable in medicine as it ever was; all great investigators have been endowed with vivid imaginations. But the true medical investigator always submits the speculative ideas that arise in his mind to the crucial test of observation or experiment. The time for "medical systems" and for *a priori* medico-philosophic speculations uncontrolled by objective methods is past; it should never be permitted to return. The slow and painstaking accumulation of facts by men trained in the natural sciences of physics, chemistry, and biology and in the mental sciences of psychology, sociology and ethics will gradually increase our understanding of the causes of disease and will lead to ever more successful methods of improving biological responsivity.

I have tried to show that "conditional thinking" in medicine does not do away with "causal thinking", provided we accept the definition of "cause" that I have given, namely, the etiological factor or group of factors that on examination of the multiplicity of conditions concerned in a process is found to be of the greatest importance from the standpoint of the inquirer who sets the problem at the time that he sets it. I have tried to show that biological and sociological conceptions of man are greatly widening the work of the physician, in their search for causes, since they make it clear that inadequate responsivity to biological needs may be due sometimes to the constitution of the phenotype, sometimes to the physical, the psychical or the social environment in which the individual is immersed. Neglect of any contributing factor to the irresponsivity observed, whether that factor be constitutional or situational, may result in failure where success could otherwise be achieved. And, finally, notwithstanding the pessimism that temporarily prevails among physicists who work with light-atoms and and electrons, we physicians can afford still to be optimistic and be guided by our common sense. Our studies based upon the idea that the universe *is* an orderly place and upon the conviction that observation and experiment will reveal the origin and nature of disease and permit us to help the human psychophysical units that have become inadequately responsive, would seem to be justified, at any rate for our practical purposes. We *are* gradually learning to predict; and we *are* steadily and in ever-increasing degree gaining the power to control! Let us, therefore, continue this good work.

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CASE OF FRONTAL SINUS EMPYEMA WITH SUBPERIOSTEAL ABSCESS IN GIRL AGED SEVEN YEARS

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Patient was a well nourished girl of seven years, and gave no previous history of trauma, headache, or any of the severer children's diseases, was not subject to repeated naso-respiratory infections, this present illness being her first severe infection.

Chronologically, the order of events was as follows: On, or about February 16, 1924, she contracted a typical "head cold", the discharge became thick and purulent four or five days later, and the child began to complain of pain over the eyes for the first time, this pain being neither severe nor alarming. Two weeks after the onset, a slight edema appeared over the right eye and the attending physician, Dr. Baumgarten, treated this successfully by means of a nasal spray of adrenalin, and cold compresses. One week later, the swelling reappeared, at which time the child underwent a brief attack of German measles. The swelling, however, refused to recede under treatment, but steadily became larger and the accompanying periorbital edema more pronounced.

Figure 1

It was at this time, March 16, one month after onset, that I saw the patient for the first time. Figures 1 and 2 illustrate her appearance very well.

The swelling over the glabellar region was about the size of a hen's egg, no inflammatory reaction was present in the skin, which was tense and shiny, the mass was fluctuant and but moderately tender to touch.

Anterior rhinoscopy on the right showed a moderate septal deflection high up toward the right and the mucosa highly inflamed and congested so that the middle fossa was obliterated and no free pus was draining from any point. The patient had noted no purulent discharge either anterior or posterior for the preceding five days. The left nares showed nothing of interest except a moderate general congestion. The antra were clear on transillumination and not tender to pressure.

Figure 2

Temperature was 99.2 and child did not look or act acutely ill.

She entered Harper hospital March 17, 1924, and roentgenograms taken at that time are shown in Fig. 3. Anterior-posterior plates, according to the report, show clouding of both maxillary sinuses, right

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ethmoid definitely cloudy, left faintly so, and both frontals air-containing. Lateral plates, however, showed well developed frontal sinuses, both being cloudy.

It was impossible to get the location of any bone dehiscence by examining the plates. Other details of the examination showed a W.B.C. of 11,000 with 78 per cent polys, a negative Wassermann, and normal eye grounds.

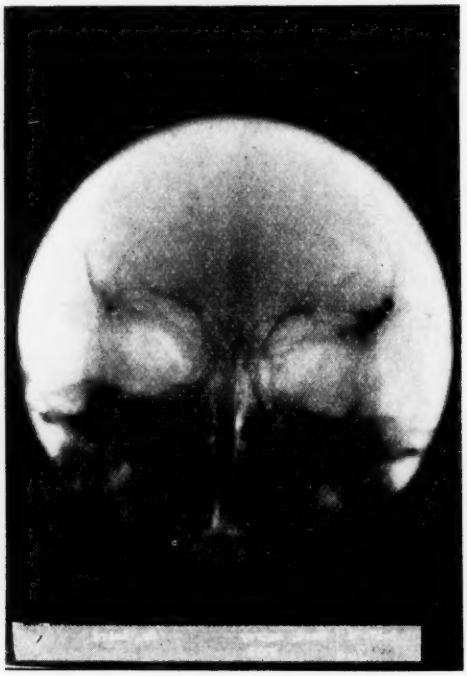

Figure 3

The first operation was done March 19. We made a regulation right brow incision as for a Killian, but did not extend this down the lateral aspect of the nose. Upon incising through the periosteum, about one-half ounce of thick yellow pus was evacuated, which later, on culture, showed staphylococcus and non-hemolytic streptococcus. Bone necrosis, involving the whole outer table in an area the size of a 25-cent piece was found, not directly over the sinus, but directly in center of the glabella. In order to remove this a second incision was made one and one-half inches long extending upward in the mid line from bridge of nose. The necrotic bone was then removed, and outer edge of sinus lightly curetted, but the inner table was left absolutely alone. A one and one-half inch perforated rubber tube drain was inserted in the central incision and both wounds left wide open. On account of the extreme thickness of the wound edges nothing further was done at this time.

For the next five days there was rather profuse purulent drainage, and the subcutaneous infiltration gradually receded. There were no signs of intra-cranial involvement and child's condition was excellent, so, on March 24, a second operation was performed.

This time the inner wall of the right frontal sinus was thoroughly examined and no demonstrable communication with the brain cavity was found. A large fronto-ethmoidal cell opened down into the nasal cavity. The sinus mucosa was so necrotic it was easily sponged away. The inter-frontal bony septum had a necrotic perforation which led directly into the left frontal sinus. This septum was removed but no free pus was seen in the left sinus. With these additional findings, we again withdrew without completing a Killian and awaited the results of the next few days. The next day there was a marked swelling and redness around the left eye, but this gradually receded during the next 48 hours.

The third and last operation was done on March 28, at which time the brow incision was continued down the lateral aspect of the nose, and the floor of the right frontal sinus was removed, being careful to preserve the orbital bridge, the lateral opening was made into the nose, and about one-half the right middle turbinate was cut away. A gauze and rubber drain was placed leading from the sinus down through into nose and out the right nostril. All skin incisions were closed with interrupted horse hair sutures in the hope that the one drain would be sufficient for both frontals.

The post-operative course was uneventful from this time on. All sutures held but one. The drain was removed on the sixth day and she left the hospital April 4. A small stitch abscess around one suture near the inner canthus delayed the complete healing somewhat, but by April 26th complete healing had taken place.

In May, child had an acute naso-respiratory infection but it produced no trouble in the operated area. Still, the mother believed everyone would worry less if they moved to Florida, which they did.

I saw patient the last time in August, 1926. She has been healthy while in Florida, and the cosmetic result does not necessitate the wearing of glasses as we had anticipated.

COMMENT

This case seemed so unusual that I determined to search the literature for the

past 25 years in the effort to find a parallel to it.

McKenzie reports a case of a girl aged seven, who, following trauma, developed a frontal sinusitis with pronounced pain and swelling which spontaneously ruptured and gradually healed without operative interference. Others report cases between the ages of eight and fourteen years, but none of these approached the degree of involvement which we have here. Oppenheimer in 1913 stated that previous to the seventh or eighth year the frontal sinuses are usually not developed. Occasionally, however, as early as the fifth year, but as a rule the sinus does not extend far into the frontal bone before puberty. This case, among others, shows the importance of the exceptions and emphasize that due to the extremes of variability of the frontal sinus not only in size and shape but in the age at which it develops, each case is a law unto itself.

I was fortunate, however, to find in the Monatschrift fur Ohrenheilkunde in 1913 a similar case reported by Vander Wildenberg which showed an even greater involvement than this one and is well worth abstracting.

A child, aged seven years, was recovering from a typical attack of mumps, when she complained of pain and swelling over the right eye. There was no previous history of catarrh or nasal discharge. At the first examination, the child complained of intermittent headache and level of brow there was a slight swelling the size of a five franc piece extending a little below the level of the nose and most marked on the right, the upper lid being noticeably edematous. Anterior and posterior rhinoscopy were negative and there was but a low degree of fever. Five days later, severe frontal pain set in, and the swelling increased and became fluctuant. This was incised and the underlying bone explored, but no lesion was found. Child grew worse after this procedure, temperature rising and pain more severe, and on the third night following the incision had an epileptiform attack, was irrational, and had muscle spasms and incontinence. Tendon reflexes were exaggerated, Babinski and Kernig were positive and the cerebrospinal fluid was under pressure and slightly cloudy.

The child was immediately operated. The right frontal sinus showed polyps completely blocking naso-frontal duct, but all bony walls were intact. The left frontal was therefore exposed and polyps were found here also, and on being removed from posterior wall, showed tense dura underneath. This was incised and several drops of pus came out. After probing in all directions, gauze drainage was inserted and nothing further done. That evening the temperature fell to normal and in eight days all the meningitic symptoms were gone, and in one month the child had completely recovered from all three abscesses, pre-frontal, frontal, and sub-dural.

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LIVER MAY BECOME A SUBSTITUTE FOR INSULIN

Liver, which is now being used extensively as a cure for anemia, may become a substitute for insulin in the treatment of diabetes, it appears from studies made at the Peter Bent Brigham hospital, Boston, by Dr. Harry Blotner and Dr. William P. Murphy. Dr. Murphy with Dr. G. R. Minot developed the liver treatment for pernicious anemia. In the study just reported, Doctors Blotner and Murphy found that liver contains a substance that will reduce the blood sugar concentration of the blood as insulin does. Liver has been heretofore excluded from the diet of persons suffering from diabetes, because liver contains glycogen, a carbohydrate which may be turned into sugar in the body. In these studies diabetic patients were given liver to eat in place of insulin injections, and their blood sugar remained at a low level. Liver may not prove as effective in reducing the blood sugar of all diabetic patients as it did in the cases studied by Doctors Blotner and Murphy. However, it will be of economic advantage to those for whom it is effective, particularly in the case of patients who cannot give themselves the insulin injections and must add the cost of a nurse to the cost of the insulin itself. When liver is analysed chemically, the fractions or parts that are effective in the treatment of pernicious anemia have no effect on the blood sugar, while certain liver fractions that are ineffective in the treatment of pernicious anemia have an effect on the blood sugar like that of whole liver, the studies showed.—Science Service.

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CONGENITAL VALVE OF THE POSTERIOR URETHRA

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Congenital valves of the posterior urethra are not common, but when present may be responsible for much damage, as the following case illustrates:

CASE REPORT

Henry Ford Hospital, No. 100871. A boy 10 years old was brought to the Henry Ford Hospital with a history of urinary disturbance. Apparently his health had been that of a normal boy until a year before admission, when he commenced to have nocturnal enuresis and slight incontinence during the day. He grew worse; three or four months previous to his admission, on the advice of a physician, circumcision had been done, but no improvement followed. During the month before admission he had been catheterized several times, about a quart of urine being obtained each time.

Examination showed a fairly well developed, but markedly undernourished boy. The breath had a urinous odor. There were several sloughing ulcers on the buccal mucosa, especially on the left side of the tongue. The tonsils were large and the teeth dirty. The anterior and posterior cervical glands were enlarged, and the inguinal glands shotty. The chest was funnel-shaped; the heart and lungs showed nothing abnormal. In the lower abdomen, extending to slightly above the umbilicus, was a firm, triangular, somewhat irregular tumor, evidently a distended bladder. The left testis was undescended. The patient was catheterized and a quart of cloudy urine obtained. Following this, the abdominal tumor disappeared except for a doughy, muscular mass deep in the pelvis.

The blood Wassermann test was negative. Examination of urine: specific gravity, 1.008; albumin, two plus; sugar, none; pus, four plus. Routine examination of the blood: hemoglobin, 64 per cent; red blood cells, 3,140,000; white blood cells, 16,800. Blood chemistry: non-protein nitrogen, 112 mg. per 100 c.c. blood; urea nitrogen, 71 mg. per 100 c.c. blood; creatinine, 3.53 mg. per 100 c.c. blood. Phenol-sulphon phthalein did not appear in the urine in 45 minutes after intravenous injection.

An indwelling catheter was fixed in the urethra, and the patient was put on forced fluids and a low protein, high caloric diet, containing much sugar. Under this regime his condition improved rapidly, and in three weeks the non-protein-nitrogen of the blood fell to normal, and the phenol-sulphon-phthalein test of renal function showed 13 per cent in two hours.

With the Butterfield cystoscope an examination of the bladder and urethra was made. The bladder did not show extreme trabeculation, but did show marked injection. The ureteral orifices were not seen. In the posterior urethra were found two valvelike folds of mucous membrane, running from the verumontanum to the roof of the urethra near the bladder orifice. Cystography showed a large conical bladder with a huge ureter running from it on the left side. On the basis of these findings, diagnosis was made of chronic urinary obstruction caused by congenital valve of the posterior urethra. Through the Butterfield cystoscope the valve was cut by the fulgurating spark.

Eight days later, one month after admission, the patient left the hospital, able to hold urine all night, but dribbling some in the day time, while up and around. His general condition was excellent, and shortly after his discharge from the hospital he returned to school. He has been kept under observation during the subsequent seven months; his general condition remains excellent, and he leads the life of a normal boy of nine except that he wears a portable rubber urinal during the day. He is able to start and stop the urinary stream, but apparently when he is at all active there is leakage. Probably the internal sphincter has been so dilated that it is incompetent, and the voluntary sphincter has not completely taken over its function. To remedy this, it may be advisable at a later date to perform some kind of a plastic operation on the bladder neck.

Of the interesting features of this case, probably the most striking is the length of time the patient was under medical observation before it was recognized that there was an obscure condition present which required special investigation. It is only in the past few years that these congenital valves of the posterior urethra have been recognized, and only comparatively recently that instruments have been devised by means of which the urinary tract in children can be thoroughly examined. There is now, however, no reason why a child with a urinary lesion should be allowed to drift along without a diagnosis for an indefinite time, while his renal tissue is being steadily destroyed. There are many conditions capable of diagnosis for which we know of no adequate treatment, but there are also numerous conditions amenable to treatment if recognized early, and among these are some, if not all, cases of congenital valves.

The first mention of such congenital valves in the literature is by Lengenbeck in 1802. The first case diagnosed clinically was by Young in 1913, and the condition was successfully treated by him at the time. Up to 1927 fifty-six cases had been reported, some having been diagnosed clinically and showing a fair percentage of operative cures, and others having been recognized only at necropsy.

Young and Frontz have studied the condition very carefully, and divide these classes according to the type of valve present. In Type 1 the valve folds extend

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downward from the verumontanum, joining the walls of the urethra in such a way as to cause obstruction of the outflow of urine, and none of the introduction of instruments from the outside. This is the commonest type. In Type 2 the folds extend upward toward the bladder from the verumontanum. The case described in this report belongs in this class. In Type 3 there is an iris valve, a membrane with with a small opening, unconnected with the verumontanum, and which is attached to the whole or a part of the circumference of the urethra. The etiology of these conditions is in dispute. It seems probable that the condition is of embryonic origin, but no theory of their origin explains all these types.

The symptoms are those of urinary obstruction, usually with paradoxical incontinence, infection, and in the late stage, renal insufficiency. In the diagnosis, the history is very important. Urinary difficulty or incontinence, unassociated with pain, is suggestive; abdominal distention may be present. In a male child any urinary obstruction, especially if the urine is infected, should cause suspicion of the presence of a valve. Usually catheterization is easy, and the presence of a large amount of residual urine should direct attention to this condition. A cystogram often gives valuable information concerning the condition of the posterior urethra and the ureters, which in long-standing cases may be tremendously dilated. These valves are not of frequent occurrence, and are usually reported in childhood, because if the condition is not corrected, the victims often do not live to adult life. The great majority of reported patients are under 10 years of age, though the condition sometimes persists to old age before being discovered.

The boy reported above is much improved, but the ultimate prognosis is not good on account of the extensive irremediable renal damage already present, and the urinary tract infection which will probably not clear up. It is deplorable that most of these conditions are not diagnosed until so much damage has been done, and it is to be hoped that in the future such cases will be seen earlier. The importance of a persistent pyuria in the absence of other symptoms has not been fully appreciated. Certainly any pyuria extending beyond six months demands urologic investigation, no matter how young the individual. This is especially important in the case of boys, since in practically all cases of persistent pyuria in boys there is an abnormality of the urinary tract as the chief causative factor.

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RACES REACT DIFFERENTLY TO BROMIDE DRUG

If the doctor asks, "What race do you belong to?' it may not be one of those unimportant questions. It might make a difference in the treatment prescribed. That this is the case in epilepsy was reported by Dr. John Notkin and three associates from the New York Post-Graduate Medical School and Hospital, to the American Psychiatric Association.

Italian and Hebrew patients are used to large amounts of salt in their food. When they were given sodium bromide, a sedative, to ward off epileptic convulsions, Dr. Notkin found that special care had to be taken that the bromide did not reduce the salt concentration in their blood too low. Anglo-Saxons who ordinarily eat less salt could stand higher doses of this drug without reducing the salt concentration in their bodies to a hazardous extent.

Bromide has been largely discarded in treating epileptic patients because of its undesirable effects on the body chemistry. The investigations at the Manhattan State Hospital indicate that if the dose is adapted to the patient's nationality and to his individual body chemisry, the undesirable affects can be averted.

"The effect of bromide on the body chemistry is not yet fully understood," Dr. Notkin said. "It seems reasonable to suggest that the antispasmodic influence of the drug is due to the decrease of the irritability of the nerve cell."

Sixty-five cases given the bromide treatment were described by Dr. Notkin, who said that the number of attacks of convulsions was greatly reduced and in many instances epileptics have had no seizures for a year or longer.—Science Service.

FLU CAUSES RECORD FEBRUARY DEATH RATE

The highest February death rate for six years has been reported by the Metropolitan Life Insurance company. Influenza caused the high death rate in February of both years, 1929 and 1923. For February 1929 there were 3,821 deaths due to pneumonia and influenza. Deaths from certain other causes, such as diseases of heart, kidneys and circulatory system, were also increased during February, largely as a result of influenza persons already suffering from a chronic form of these diseases. Another disease showing a high death rate for February was whooping cough. The records for the first two months of 1929 indicate that this will be another "whooping cough year" unless marked improvement follows. However, the months in which deaths from whooping cough are usually most numerous come later in the year.—Science Service.

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THE RELATION OF UPPER RESPIRATORY INFECTION TO THE MIDDLE EAR

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The usual large number of otitis medias at this time of the year, and the inadequate efforts to prevent such infections, prompts me to emphasize the relationship of the eustachian tube to upper respiratory and middle ear infections.

In order to emphasize this relationship, it is necessary to review the anatomy of these structures. The eustachian tube connects the cavity of the tympanum or middle ear with that of the nasopharynx, and forms a very important part of the sound conducting apparatus. The eustachian tube, with its prominent torus or cushion, is found in the lateral wall of the nasopharynx about 1 centimeter from the neighboring walls. The eustachian tube consists of two parts; an osseous and a membrano-cartilaginous portion. Its length in adults varies from 31 to 38 millimeters of which one-third is bony and two-thirds fibro-cartilaginous. The two portions of the tube are not in the same straight line, their point of junction forming an obtuse angle opening downward. The general direction of the canal from the tympanum to the nasopharynx is forward, inward and downward. The narrowest part of the tube is where the bony and cartilaginous portions join, and this is known as the isthmus. The mucous membrane of the tube is continuous in front with the nasopharynx, and behind with the tympanic cavity. It is covered with ciliated epithelium, and is thin in the osseous portion, while in the cartilaginous section it is thicker and thrown into folds. In the bony portion there is some diffuse lymphoid tissue under the thin mucous membrane. The cartilaginous area, however, contains many mucous glands, and adenoid tissue, especially near the pharyngeal orifice where it is called the tubal tonsil. Owing to the absence of a complete cartilaginous frame the anterior wall is in contact with the posterior except when acted on by the muscles. In the bony portion, though the lumen is smaller, it is open.

It is very important also to emphasize the anatomy and differences between the eustachian tubes of the adult and the infant.

In the new-born infant, the eustachian canal presents several marked variations from the adult type.

1. It is very much shorter, measuring not more than 14 or 15 millimeters as compared to 33 to 38 millimeters in the adult.

2. The tympanic orifice and the caliber of the bony tube are quite as large as in the adult. The whole canal is therefore, in proportion to its length, much wider.

3. The two portions of the tube (membranous and bony) are more merely in the same straight line, so that there is no demonstrable angle at their point of junction.

4. The whole tube is nearly horizontal in direction, so that, while the pharyngeal orifice in the adult is on a lower level by 12 to 14 millimeters than the tympanic orifice, it is on the same plane as the latter, or even lower in the infant at term.

5. The pharyngeal mouth of the tube in the infant at term is on the same level as the hard palate, whereas in the adult it is not less than 10 millimeters above the hard palate. It is readily evident that all these differences help to account for the prevalence of tubal disease in young children.

Physiologically the eustachian tube serves as a communication between the tympanic cavity and the pharynx, and through this latter to the exterior. The obvious advantage of this arrangement is that the pressure on the two sides of the membrana tympana is kept the same. The pharyngeal opening of the tube is normally closed, but it may be opened by raising or lowering the pressure in the pharynx. This happens during the act of swallowing by the pull on the muscles, therefore we perform this act whenever our sensation from the ear drum warns us of an inequality in pressure upon the two sides. When, for instance, we enter a caisson in which the external pressure is increased over the normal atmospheric pressure, the ear drum would be driven inward by the excess external pressure were it not for the existance of the eustachian tube. Under these conditions the swallowing movement will open the pharyngeal end of the tube, and thus bring the tympanic cavity under a barometric pressure equal to that on the outside.

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Causes of (acute eustachian) tube and middle ear disease. Among predisposing causes must be included all conditions interfering with normal nasal respiration. The presence of adenoids is therefore a particularly potent factor, and children are much more frequent sufferers from tubal congestion and inflammation than generally recognized. Among adults such obstructive lesions as hypertrophic rhinitis, septal deflection, and ecchondroses, are conditions which are apt to induce recurrent attacks of eustachian disease.

Of exciting causes by far the most frequent and important is the common "cold in the head," or acute nasopharyngitis, with which some degree of eustachian congestion or inflammation is probably always associated. The acute exanthemata are next in importance as the cause of tympanic disease. The careless use of the nasal douche, and diving and swimming under water, are less often offenders.

Assuming an acute head cold—what is the means of conveyance to the middle ear? During any nasopharyngitis an otitis media may result by direct extension. There is an inflammation of the mucous membrane. There is an associated inflammation of the lymphoid tissue within the eustachian orifice, and about its posterior lip in Rosenmullers fossa. This inflammation may extend along the lymphoid tissue which is found throughout the length of the tube. Children are particularly subject to this means of conveyance.

The other very common means of transportation of infection is by forcible insufflation in blowing the nose. By this procedure the air in the nasopharynx is condensed and finds its way under pressure through the eustachian canals to the middle ear cavities. Foreful blowing of the nose at any time is a very bad habit that man has acquired. Animals are unable to do this. They must resort to sneezing to clear the nose, and consequently have much less ear trouble.

The pathology and course of this infection with its resulting otitis media is the next consideration. As soon as the tubal function is disturbed, i. e., when a supply of air to the tympanum is diminished, the air pressure within the middle ear cavity is negative, and the drum membrane is forced inward toward the inner tympanic wall by the unopposed atmospheric pressure from without. Inspection of the ear will now reveal a retracted drum membrane with no color changes. It is probably at this point that the aural symptoms are experienced. The more common ones being stuffiness, sensation of foreign body in ear, loss of hearing, and tinnitus.

Unless the tubal lesion is promptly controlled, very marked congestion of the tympanic mucous membrane may occur. The periphal plexus of veins along the margins of the drum membrane, and the attachment of the hammer handle will be greatly engorged. This is the next step, namely, that of tubo-tympanic congestion, and the patient may now experience pain.

The next step in the course of the disease is that of acute middle ear inflammation. From the standpoint of practical and clinical otology, all middle ear inflammation may be considered under two heads, viz. 1. Catarrhal otitis media by which term is meant any acute inflammation, purulent or non-purulent, confined to the atrium, and 2. Acute purulent otitis media, or any acute inflammation involving both atrium and tympanic vault. The exciting cause and bacteriology may be the same in either case.

It may be well to review briefly certain anatomical features of the middle ear. It is divided roughly into an atrium and attic. This division is made by a horizontal line passing through the short process of the malleus. (This is also the upper level of the membrana tensa.) The attic contains the greater part of the ossicles with their ligaments and broad folds of mucous membrane, so that it is divided into spaces. The atrium on the other hand is lined by an exceedingly thin membrane very closely adherent to its walls. Externally the atrium is closed by the tense, inelastic, and rather unyielding membrana tympana. Superiorly the atrium is more or less completely separated from the vault by the ossicles with their ligaments, and mucous membrane folds. From the anterior wall the eustachian canal leads forward. Infection reaching the tympanum from the nasopharynx by way of the eustachian tube lodges first in the atrium.

An inflammatory process confined to the atrium begins with marked dilatation and engorgement of the vessels of the lining membrane. Next there is a transudation of serum and migration of leukocytes from the veins into the tissues of the mucoperiostial lining. This inflammatory thickening of membrane renders the separation of trium from the vault more complete. The eustachian tube is also closed by inflammatory swelling. With the formation of pus or effusion of serum into the atrium, the walls are soon subjected to pressure.

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The outer wall or membrana tympana is the one which offers least resistance. Hence the changes in the appearance of the drum membrane.

The physical changes in the drum membrane vary with the time that has elapsed since the onset:

1. If seen shortly after earache is first experienced, the drum head will be found exceedingly red in the upper portion of the tense membrane. This gradually extends downward.

2. When examined a few hours later the tense membrane is not only exceedingly red, but bulges outward into the lumen of the meatus, and most of the landmarks such as the malleus and cone of light are obliterated.

3. Examination at a later stage may reveal the canal filled with pus with relief of pain. The perforation is usually found in the posterior segment, and more particularly behind the hammer handle. With free drainage, there is relief of tension and early resolution. As congestion about the eustachian orifice subsides, the eustachian canal provides a supplementary drain for the escape of serum or pus.

The acute purulent otitis medias in contradistinction to the catarrhal type involve both the atrium and vault. The vault presents certain anatomical features bearing very much on the pathology of suppurative lesions originating within it. (a) It is directly continuous posteriorly with the so-called mastoid antrum. Pus in the vault is therefore not quickly subjected to pressure, flowing rather backward into the antrum as the path of least resistance. There is as a result much danger of suppurative mastoiditis. (b) There is no natural pathway providing for the free escape of pus from the vault, and even extensive incision of the drum membrane does not provide free and adequate drainage from the antrum. (c) The lining membrane of the vault hangs loose serving as a suitable nidus for infection.

The physical changes in the drum membrane naturally vary much with the progress of the disease. 1. If the patient is seen shortly after the onset, the upper posterior portion of the tense membrane and Shrapnell's membrane itself are intensely red. 2. Next there is a tendency for the redness and injection to spread down over all the membrana tensa, but Shrapnell's membrane remains most intense. There is also inflammatory thickening in this area and obliteration of landmarks. 3. Still later we see a definite bulging almost limited to Shrapnell's membrane. The rest of the drum is much inflamed. 4. Later we may see pus in canal, removal of which reveals the entire drum red and bulging. There is a small perforation in the posterior segment of membrana tympana. The postero-superior canal wall, i. e. that part immediately adjoining the drum membrane is much swollen, obliterating the line of demarcation between the canal wall and drum.

In practically all cases for early treatment, an incision of the drum should be made beginning near the lower marginal attachment of the posterior segment below and extending upward to and through the posterior fold so that the knife may enter and provide drainage from the vault. When, in addition, the posterio-superior canal wall is swollen, this also should be incised by rotating the knife so that its cutting edge is directed upward. In the catarrhal form however, incision should be limited to the membrane tensa.

CONCLUSIONS

1. I believe we are justified in concluding that the eustachian tube by virtue of its position and anatomy, plays a very important part in middle ear infection, and that this is particularly true of infants.

2. That infected tonsils and adenoids, nasal obstruction or infections, head-colds, and incorrect nose-blowing are the outstanding causes of middle ear infections.

3. And finally, that middle ear infections once established, demand myringotomy.

ANXIETY HARD ON BODY, HYPNOTIC EXPERIMENTS SHOW

New evidence that anxiety may play havoc with the body no less than with the mind has been obtained by use of hypnosis. The tests were made by Dr. J. C. Whitehorn, Dr. Helge Lundholm, and G. E. Gardner, of McLean hospital, Waverly, Mass., and were reported before the American Psychiatric Association, recently at Atlanta.

The experiments indicate that when an individual becomes extremely anxious and fearful his body engine may race like a motor under pressure and strain. On the other hand, moods of depression, elation, or irritability do not appear to produce any certain increase in the metabolic rate: that is, the rate at which the body engine converts food into tissues and energy.

Obtaining data on bodily processes during an emotional state is difficult because an excited individual is not likely to remain sufficiently quiet to permit the making of accurate tests with apparatus. A psychologist who consented to be hypnotized was used for tests.—Science Service.

THE TREATMENT OF CHRONIC BRONCHO-PULMONARY SUPPURATIVE LESIONS LIMITED TO ONE LOBE OF THE LUNG*

WYMAN WHITTEMORE, M. D.**
BOSTON, MASS.

For about fifteen years it has been my privilege to be directly in charge of all the thoracic surgery that has been done at the Massachusetts general hospital, with the exception of the cases of acute empyema that have been handled by the general surgical service during the last few years. In fact, as thoracic surgery seemed well on its way to become a very important branch of surgery, it was deemed wise, two and a half years ago, to establish a thoracic service, or clinic, at the Massachusetts general hospital. Two surgeons, two medical men and a bronchoscopist were put in charge of this work. We have been asked to pass judgment on cases that might be suitable for surgery, to help in making diagnoses, to advise treatment in cases that were not necessarily surgical, and finally to aid in the disposition of certain cases.

The type of case that has been of particular interest to me is that with a chronic suppurative lesion, the disease being limited to one lobe of the lung and of a non-tuberculosis nature. The term "bronchiectasis" is the common one in usage for this group, but as the incidence of limitation of the suppurative disease to the bronchial tree alone is very rare, and in view of the fact that the pathology commonly shows a varying amount of infection in the parenchyma of the lung as well as in the bronchial tree, we rather prefer the term "chronic broncho-pulmonary infection with bronchial dilatation."

We believe it is a fair statement to make that all methods of treating this condition other than its removal by some surgical procedure are merely palliative and will not cure the disease.

Medical treatment may be dismissed by saying that it will never cure this condition, although if the patient can devote his days to taking care of his health, spending his winters in a warm, dry climate, and using postural drainage, it may be that he will live a long and fairly comfortable life.

Bronchoscopy will not effect a cure, but if the patient is willing to be bronchoscoped at regular intervals, there is no question but what his condition will be improved, in that the septic symptoms will largely subside and the amount of sputum raised will be diminished. It seems to us that the greatest benefit from bronchoscopy is obtained from aspiration of the pus from the bronchial tree, by the dilatation of any stricture or strictures of the bronchus and by the removal of any granulation tissue that is tending to obstruct the bronchus. We do not feel that irrigation of the bronchial tree or the injection of medicated oils is of any therapeutic value. The early cases of bronchiectasis which are caused by the lodgment of a foreign body in a bronchus, and which are promptly cured by its removal, are not included in this discussion.

We realize that a great deal has been said and written about the injection of lipiodol into the bronchial tree to aid in making diagnosis. Our clinic, as well as a great many others, has produced very beautiful X-ray films, but after a certain amount of experience, we feel that in most instances the diagnosis can be made without lipiodol. Often we see films taken just after the patient has coughed, which show lipiodol scattered throughout the good lung. May it not be quite possible that infection is carried by the lipiodol and spread into the sound lung? We feel this is a real danger and so at the present time only use lipiodol in a very small selected group of cases.

A third possible method of treatment is artificial pneumothorax. Here, again, we do not believe that any cure can be brought about by its use, with possibly very rare exceptions. On the other hand, if the lung is not adherent to the costal pleura, so that it can be completely collapsed, the general condition of the patient will be improved and the amount of sputum will be much diminished. But when the lung is allowed to expand, the symptoms gradually return and it is found that the disease has not been cured. In many instances in which artificial pneumothorax is kept up for a long time, fluid will appear in the pleural cavity,

* Read before the Michigan State Medical Society at the 108th Annual Meeting, Detroit, September, 1928.

**Dr. Wyman Whittemore is a graduate of Harvard College, 1901; Harvard Medical School, 1905. He is visiting surgeon to the Massachusetts General Hospital, Boston and Surgeon-in-Chief of Beth Israel Hospital, Boston; Associate in Surgery Harvard Medical School, Boston, and Professor of Clinical Surgery Tufts Medical School. He is President-Elect American Association for Thoracic Surgery.

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which will cause this form of treatment to be abandoned; and it is not uncommon for this fluid to become infected, or, as in our experience in a few cases, during the treatment adhesions have been torn, opening the infected area in the lung, resulting in a virulent empyema. The condition then becomes more serious, as to the bronchiectasis there is added an acute empyema.

I well remember a strong young Italian girl with multiple abscesses of the lower lobe and some bronchiectasis. Lobectomy was advised by me, but the medical service decided to treat her by artificial pneumothorax. She did well for several months, then developed some infection in the good lung, and finally a virulent empyema on the original side, and died.

Surgical operations for this condition are two-fold. The palliative ones from which no absolute cure should be expected (except possibly in extremely rare instances) and the radical ones from which a cure may be expected in a large percentage of the cases that survive the procedure.

There is no reason to suppose that drainage of the diseased area will produce a cure. However, it is quite justifiable to drain a large dilatation of a bronchus or a large abscess of the lung for temporary relief. This operation merely changes the direction of the drainage, and where the patient has been raising quantities of pus by coughing, following the operation large quantities come through the drainage tube and will continue to do so as long as there is an open sinus.

There is a certain amount of difference of opinion as to the value of graded thoracoplasty. When the disease is situated in more than one lobe of the lung, it seems to be the best operative procedure. But in dealing with the disease where it is limited to one lobe, our experience has led us to believe that it should be undertaken merely as a palliative. The general condition, following the operation, may be much improved and the amount of sputum temporarily or permanently greatly reduced, but it does not entirely disappear and the patient is not absolutely cured.

In fact, in our experience, although the amount of sputum may have been greatly diminished, yet there is still so much that it is a great question in my mind as to whether or not the procedure (bearing in mind the patient's suffering from a number of operations) has been worth while. I rather think not.

Every one interested in this subject is familiar with Graham's cautery lobectomy. His results with this technic in cases of multiple abscesses of the lung are extremely brilliant. Our experience with this technic has been too limited to mention except to say that in those cases of abscess that have been drained unsuccessfully, in that after several months they show little if any signs of being cured, we believe this method the one of choice.

The cases that we consider ideal for lobectomy are the chronic broncho-pulmonary infections limited to the lower lobe, in which the lobe is atelectatic. It is very much smaller than normal, and often is overlapped partially or completely by the inflated upper lobe. In the X-ray film, the lobe is readily distinguished as a small triangular shadow with the base on the diaphragm. In this class of cases the operation, we think, should be done as early as possible. In other words, we do not believe that the patient who has had the disease for months or years before entering the hospital should be treated either medically, by artificial pneumothorax, or by bronchoscopy. Of course, bronchoscopy should be done to rule out foreign body or malignant disease.

Amputation of a lobe of the lung inside the pleural cavity has been accompanied by a very high mortality. In fact, the mortality has been so high in our hands at the Massachusetts general hospital, that the operation has been abandoned. Out of six cases operated upon, only one left the hospital alive. Some of the deaths were caused by unexpected accidents, as, for example, a sudden fatal secondary hemorrhage on the sixteenth day after the operation, and the development of a brain abscess in another case six weeks following operation, when the side operated upon had done very well and after the patient had reached the stage of being up in a wheel-chair.

About two and a half years ago, it occurred to us that it might be possible to do a lobectomy in an entirely different way, and the technic about to be described was employed in nine cases, in eight of which the disease was located in the lower lobe and in one in the upper lobe. The principles involved are mainly three: (1) To shut off the blood supply to the lobe. (2) To fix the mediastinum. (3) To allow infection to set in gradually.

There always has been, and always will be, infection of the pleural cavity following lobectomy for a septic condition. We believe that if this sets in rapidly, a "wild-

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fire" infection takes place in the mediastinum, as well as in the pleura, and is the main cause of death.

Our desire, then, is to have the lobe gradually become gangrenous and slough off, having had its blood supply shut off, and that by this means infection of the pleura will be a slow one that the patient can withstand.

Under gas-oxygen and ethylene anesthesia the pleural cavity is opened and the diseased lobe of the lung examined to determine the extent of the process and also the amount of adhesions about the lobe. This seems to us important, as, if the adhesions are very firm and extensive, it may be unwise to attempt a lobectomy. But if lobectomy is decided upon, sections of enough ribs are removed so that the diseased part of the lobe may be delivered from the pleural cavity after adhesions and the pulmonary ligament is divided. The lung is firmly sutured to the muscles of the chest wall by chromic catgut and heavy linen thread, taking very deep stitches into the lung tissue. One large gauze sponge is placed beneath the lobe to aid in holding it, and a No. 20 French catheter is placed to the root of the lung, kept shut off, and the wound closed as tightly as possible. By means of this catheter the large quantity of bloody serum that collects in the pleural cavity for a few days may be removed without allowing air to enter. Needless to say, when the operation is completed the amount of lung protruding from the wound seems small, it being possibly as large as an orange, but there is a good deal more lung tissue outside the pleural cavity that is hidden by the thickness of the chest wall. After this operation there has been surprisingly little shock and the picture is entirely different from that following the usual procedure, as we have seen it. Nature may then be allowed to complete the operation, as in about ten days the lobe has become necrotic. A dry gangrene is at first established, then gradually there is a profuse foul discharge and eventually, in from 3 to 5 weeks, this whole area sloughs off, leaving a clean, healthy granulating stump deep in the pleural cavity with bronchial fistulae in it. During this process of sloughing and discharging, the cough gradually diminishes, to finally cease in the successful cases.

If a satisfactory amount of the lobe cannot be brought outside the pleural cavity, a tourniquet may be placed around the root of the lobe and the ends brought outside and fastened to the chest wall to fix the mediastinum. Or again, the blood supply may be shut off, if the lobe is very small, by gauze tightly packed about the root. Neither of these procedures is as satisfactory as the first.

The wound is lightly packed with gauze each day until it closes, or else a small rubber tube is placed into the pleural cavity for drainage. It has been unnecessary for the patients to remain for more than 6 or 8 weeks in the hospital.

In the 6 cases that made complete recoveries the bronchial fistulae gradually closed without anything being done to them. We believe that this has been due to the fact that the fistulae have been situated very deeply in the pleural cavity. In this position fistulae are much more apt to close spontaneously than when situated near the chest wall. The results of the 9 cases done are briefly as follows: 7 survived the operative procedure and 2 died (20 per cent). One of these later died 10 days following the operation from pneumonia in the good lung. The other case died 6 weeks after operation, having developed streptococcus septicemia. Of the 7 cases that survived operation, 6 are entirely recovered and well; 1 case has a persistent thoracic fistulae and during the last year has developed considerable disease in the good lung.

It has been gratifying to me to learn that Graham of St. Louis has employed this operation several times (three or four, at least), with satisfactory results.

Although the number of cases operated on is too small from which to draw any conclusions, it seems fair to make the following statement: (1.) That it is possible to perform lobectomy by this method. (2.) That in our hands this operation has been followed by less shock than in any other technic and the mortality has been very much lowered. (3.) That the operative procedure can be completed in one stage without too much risk.

NO CHANGE IN NATIONAL HEALTH PICTURE

Aside from a presumable increase in the number of cases of spring fever, the health picture throughout the country remained unchanged during the week ending May 18. Telegraphic reports from state health officers received by the U. S. Public Health Service here indicate very little change from last week in the prevalence of the principal communicable diseases. Meningitis remained about the same; measles, smallpox and scarlet fever showed slight decreases.—Science Service.

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MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., Commissioner
LANSING, MICHIGAN

MICHIGAN DIPHTHERIA STUDY—1928

(Cities over 10,000 Population)

Group I is the blue ribbon group of cities in diphtheria prevention. In these cities there were no cases and no deaths during the entire year of 1928. Marquette, with a population of 12,000, and Traverse City, with a population of 10,000, are in the select group among the cities of the state, in respect to diphtheria prevention.

Grand Rapids, being the second largest city in the state, has a difficult problem, but attained the desirable goal of no deaths from diphtheria during the entire year of 1928. Grand Rapids was the largest city in the United States that had no diphtheria deaths during 1928. This distinction comes to Grand Rapids after five years of intensive and constructive work with toxin-antitoxin.

Jackson, with a population of 63,000, made a remarkable reduction in its diphtheria rates. The occurrence of one case, however, removed it from Group I. This fine record has been achieved after four years of intensive work with toxin-antitoxin.

Alpena, Monroe and Holland missed the select group because of the existence of one case in each city. These cities have given toxin-antitoxin to practically the entire school population. When the preschool children can be reached with toxin-antitoxin, these cities will take their place in Group I.

In Group III are found cities having cases and deaths from diphtheria, but with case rates lower than the rate for the entire state.

Diphtheria is an absolutely preventable disease as the record in the cities of the first two groups of cities clearly demonstrates. Physicians and health officers must work together to convince the people of this before this disease will ever be banished. When these facts are placed before intelligent people, they will become sufficiently sensitive to the occurrence of the disease that they will do their important part in its prevention.

Group IV includes Lansing, the capitol city, and Detroit, the state's largest city, with four of its surrounding cities: Hamtramck, River Rouge, Wyandotte and Pontiac. The three cities having the highest diphtheria case rates were Owosso, Muskegon Heights, and Iron Mountain. These three cities are each about 10,000 in population, but have used only negligible amounts of toxin-antitoxin.

Iron Mountain has the unenviable record of having the highest diphtheria case rate. This case rate is three times higher than the general rate for the state. Likewise, the diphtheria death rate in Iron Mountain was three times as high as the general rate for the state.

Detroit, the fourth largest city in the United States, made another record in "fourths" as it was fourth highest in the state in case rates (144 per 100,000 population) and fourth highest in death rates (16 per 100,000 population).

DIPHTHERIA DEATH RATES—1927

(Deaths per 100,000 Population)

Michigan	11.7	Florida	6.4
New Jersey	11.4	Delaware	6.3
Utah	10.4	Massachusetts	6.2
Louisiana	10.1	Missouri	6.2
Mississippi	9.9	Connecticut	5.9
Alabama	9.8	Virginia	5.5
N. Carolina	9.3	Iowa	5.0
Kentucky	9.1	Arizona	4.8
Rhode Island	8.9	New York	4.8
Colorado	8.8	Indiana	4.6
Illinois	8.8	Wisconsin	4.5
Georgia	8.6	Oregon	4.4
Pennsylvania	8.3	Montana	4.2
S. Carolina	8.2	New Hampshire	4.0
West Virginia	8.1	Kansas	4.0
Arkansas	8.0	Nebraska	3.4
United States Registration Area	8.0	Wyoming	3.2
		Minnesota	3.1
Ohio	7.8	Maine	3.1
Tennessee	7.6	N. Dakota	3.1
Indiana	7.5	Vermont	2.6
Maryland	7.4	Washington	2.1
California	7.2		

MICHIGAN DIPHTHERIA STUDY—1928

(All Cities over 10,000 Population)

Total Cases in State.....3725
Case Rate 82.8 per 100,000 population.
Total Deaths in State.....385
Death Rate 8.6 per 100,000 population.

Group 1—Cities with no cases and no deaths.

City	Population
Marquette	12,000
Traverse City	10.000

Group 2—Cities with no deaths.

City	Population	Cases
Grand Rapids	164,000	31
Jackson	63,000	1
Ann Arbor	19,000	4
Ironwood	15,000	2
Escanaba	13,000	6
Holland	12,000	1
Sault Ste Marie	12,000	6
Manroe	11,000	1
Alpena	11,000	1
Ispheming	10,000	7

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Group 3—Cities with Case Rates Lower than Entire State

City	Case Rate per 100,000 Population	Death Rate per 100,000 Population	Ratio No. of Reported Cases to Deaths
State	82	8	.....
Adrian	30	7	4
Benton Harbor	32	6	5
Highland Park	33	4	7
Kalamazoo	33	3	9
Muskegon	45	8	5
Port Huron	51	12	4
Flint	59	3	17
Battle Creek	69	2	33
Saginaw	80	4	20

Group 4—Cities with Case Rates Higher than Entire State

City	Case Rate per 100,000 Population	Death Rate per 100,000 Population	Ratio No. of Reported Cases to Deaths
State	82	8	.....
Pontiac	91	8	11
Hamtramck	92	8	11
River Rouge	109	6	16
Lansing	125	1	100
Wyandotte	135	27	5
Detroit	144	16	8
Owosso	218	13	16
Muskegon Heights	250	18	13
Iron Mountain	290	24	12

MOUTH HYGIENE IN 1928

The activities of the Bureau of Mouth Hygiene during the past year have followed much the same lines as previously because the results seemed to prove these to be most productive.

The director has tried to keep in mind that mouth hygiene is just one phase of health service and needs to be correlated to the whole.

The aim has been to supply material and programs for health workers and others in any community in Michigan; to use as far as possible any existing agencies in promoting mouth hygiene; to create in the community an interest in improving mouth conditions; and to give as much time as possible to field work because of the great demand for efficiency of this type of service.

In field work the director goes only upon request because he cannot even meet all the requests.

On the field he tries to do three things: Demonstrate actual conditions by examination with mouth mirror and explorer of some group of children with community leaders and health workers before organizations, preferably parent-teacher groups and normal schools.

Points stressed in promoting mouth hygiene are: Nutrition, early dental attention and cleanliness.

A typical example of results is shown in the following letter voluntarily received from the school nurse in Munising. On September 25, 1928, the director reached Munising for the first and only time. Next morning he examined a second grade in a parochial school with leaders of school present; 52 were examined, only one not needing fillings, extractions, or both, 30 with cavities in permanent teeth, 38 with infected or putrescent teeth and only two who had any dental filling. At noon he lunched with the local dentists. In the afternoon he examined second and third grades in the public school with leaders present; 59 were examined, not one that did not need filling or extraction or both, 27 with cavities in permanent teeth, 42 with infected or putrescent teeth, five with any fillings. The director also spoke briefly to a hygiene class in high school and in the evening addressed the Parent-Teacher society and immediately after caught a train to Marquette.

"Munsing Township Schools,
H. A. Wood, Superintendent,
Munsing, Michigan.
April 15, 1929.

"Dear Dr. Davis:—

"Perhaps you would be interested to know that the work in mouth hygiene accomplished this year has been an interesting project. The teachers, parents, and children have co-operated so well that we feel that it has been very much worth while.

"After your visit last fall, those who were at the examination of the children and at the lecture, became interested in the work. The teachers introduced the Dental Honor Rolls in the three rooms inspected, and several children had corrections made.

"In January health lessons on mouth hygiene were given in all our grade rooms in the township. The chore card on brushing teeth, printed by the Michigan Tuberculosis Association, was used in the primary rooms. This part was emphasized in the morning inspection. During that time many children bought toothbrushes. In the upper grades, diet was stressed particularly, although even the younger children were given some instruction in this phase of the work. Dental Honor Rolls were placed in each grade room. Mr. Wood ordered some pins in red and white with the slogan GOOD TEETH printed on them. Each child is given a pin to wear when his name goes on the roll.

"The children are now keenly interested. We have only two dentists here, and they have been kept very busy. Appointments have had to be made weeks in advance. The council of the Parent-Teacher Association was told of the need of this work among our indigent children. They have undertaken to care for as many as their finances will permit.

"The names of those on the Honor Roll were placed in our local paper the latter part of February. The number then was 54. We now have a total of 90 children who have had all necessary dental work done for the present. Many are having corrections made. We are hoping to have at least one room 100 per cent this year. The necessity for at least a part-time dentist is becoming apparent to all who are interested in our schools. Judge R. W. Nebel recommended this to our Lincoln Parent-Teacher Association at their April meeting.

"One of the difficulties in the way is not the lack of parental co-operation but the lack of understanding of the need. Now that the parents are beginning to understand that baby teeth are important, we are having corrections made. But this is the biggest obstacle. In March I inspected one of the kindergarten groups again and found 17 out of 40 with "gum boils." One girl in the Junior High School who was sent by the Council to have her teeth cared for, will have to have a plate. Of course, this work could not be done, as the funds were not sufficient.

"Now, however, that the Parent-Teacher Associations are so interested in the work, we feel that through increased knowledge of the importance of this factor in the child's health, much will be accomplished. Several of the teachers have spoken of the increase in interest in school work and ability to do it, by the improvement in the child's physical condition after dental corrections. The finest result, however, is the real delight the children have in trying to secure a clean mouth with as perfect a set of teeth as possible.

"Yours sincerely,
Dorothy Hill, R. N., School Nures."

BUREAU OF MOUTH HYGIENE—STATISTICAL REPORT

September 1, 1928 to May 28, 1929

Number of places visited	188
Addresses given (adult 73, school 66, professional societies 22)	161
Conferences outside office	139
Examination clinics	156
Number examined	7,567
Leaflets:—	
Requests	1,118
Distributed	141,450
School blanks:—	
Requests	148
Distributed	66,191

An interesting development this year has been a series of health lectures to 38 County and State Normals. This has taken nearly two months of the director's time.

During the year the director has been invited to address meetings outside the state as follows: Joint meeting of American Child Health Association and American Public Health Association, Chicago, October 18, 1928, "Dental Health Education Material from the Point of View of Accuracy and Balance"; Chicago Dental Society Annual Meeting, January 15, 1929, "Taking Inventory of Our Mouth Hygiene Progress"; Massachusetts Dental Health Workers, Boston, May 6, 1929, "Dental Health Education"; Massachusetts State Dental Society, May 7, 1929, "The Dentist's Responsibility to the Child", (open meeting), "The Teeth in Relation to Health and Disease".

William R. Davis, D.D.S., Director,
Bureau of Mouth Hygiene.

DIPHTHERIA IN THE PRE-SCHOOL AGE

Analysis of the diphtheria deaths in Michigan shows clearly that the pre-school group is now the important factor in the immunization program. To bring this fact concretely to the attention of physicians, and to aid them in reaching the children of pre-school age in their own practice, a system of monthly reminders has been inaugurated in the department.

Each month, letters are sent to all physicians who reported births nine months before. The names of the children are listed in the letter, and the suggestion is made that since they are nine months of age it is time they were protected from diphtheria by the use of toxin-antitoxin. Material for the immunization is offered without charge. If the physician requests it, letters are sent directly to the parents of these children emphasizing the especial danger from diphtheria during the pre-school age and the value of toxin-antitoxin, and urging that they take the children to their physician for immunization. Parents' letters are sent only when the physician specifically asks it. Where births are reported by midwives the reminding letters are sent to the health officer if he is a physician. In communities where there is a lay health officer no action is taken.

Judging from the prompt and cordial response already received from physicians and the number of requests for toxin-antitoxin, the plan will be a success. It will at least aid in reaching an important group through the proper medium—the family physician.

THE KAHN TEST AT COPENHAGEN

The attached table was taken from the official report of the Copenhagen Serological Conference which was held in June, 1928. Dr. Kahn from the Michigan Department of Health performed the tests himself at the conference, with the results that the Kahn test showed the highest percentage of positive results with no false positives.

What is just as interesting is the fact that it showed a fewer number of doubtful reactions. The serums that were examined by the various workers at Copenhagen were sent from Paris and compilation was not made until each group of serums had been finished by all competitors. There were several more competitors, but the three tests as indicated in the table gave the nearest approach to theoretically correct results.

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SUMMARY OF RESULTS WITH THREE SEROLOGICAL DIAGNOSTIC METHODS ON A GROUP OF SYPHILITICS AND A GROUP OF NON-SYPHILITICS

(From official report of the Copenhagen Serological Conference, held June, 1928, under the auspices of the League of Nations Health Committee).

Syphilitics

Method	Total No. Tests	Summary: + + and +	+	±	Positive	Doubtful	Negative
Vernes flocculation test	434	174	62	198	40%	14%	46%
Harrison-Wyler (modification of Bordet-Wassermann)	502	210	78	214	42%	15%	43%
Kahn Precipitation test	499	305	33	151	61%	7%	32%

Nonsyphilitics

Method	Total No. Tests	Summary: + + and +	+	±	Positive	Doubtful	Negative
Vernes flocculation test	354	2	36	316	0.5%	10.2%	89.3%
Harrison-Wyler (modification of Bordet-Wassermann)	435	0	12	423	0%	2.8%	97.2%
Kahn Precipitation test	434	0	5	429	0%	1%	99%

A NEW COUNTY HEALTH DEPARTMENT

Genesee county entered the ranks of Michigan counties having full-time health departments on May 16, when its newly organized unit began functioning. The county board of supervisors authorized its establishment at their April meeting.

Headquarters of the department is at the court house in Flint. The staff consists of the commissioner, Dr. L. M. Coulter, two public health nurses, Joyce Smale and Margaret Penoyer, and an office assistant.

John R. C. Carter, M. D., joined the staff of the Bureau of Epidemiology on June first. Dr. Carter will give the major part of his attention to the deevlopment of county health department practice.

PREVALENCE OF DISEASE

May Report

Cases Reported

	April 1929	May 1929	May 1928	Average 5 yrs.
Pneumonia	772	727	1,127	643
Tuberculosis	500	688	560	565
Typhoid Fever	26	19	17	30
Diphtheria	341	393	323	349
Whooping Cough	1,261	1,157	619	613
Scarlet Fever	2,144	2,044	1,176	1,201
Measles	3,750	4,271	4,769	3,641
Smallpox	264	223	88	235
Meningitis	316	367	23	14
Poliomyelitis	4	4	4	3
Syphilis	1,718	1,415	1,028	1,145
Gonorrhea	979	719	376	676
Chancroid	23	27	5	5

CONDENSED MONTHLY REPORT

May, 1929

Michigan Department of Health Laboratories

	+	−	+−	Total
LANSING LABORATORY—				
Throat Swabs for Diphtheria				1281
Diagnosis	29	529		
Release	68	133		
Carrier	8	494		
Virulence Tests	9	11		
Throat Swabs for Hemolytic Streptococci				694
Diagnosis	152	179		
Carrier	40	318		
Throat Swabs for Vincent's	45	510		555
Syphilis				9693
Kahn	1596	7969	124	
Wassermann	1	1		
Darkfield	2			
Examination for Gonococci	182	1493		1675
B. Tuberculosis				582
Sputum	68	470		
Animal Inoculations	6	38		
Typhoid				258
Feces	9	77		
Blood Cultures		76		
Widals	7	75		
Urine	3	11		
B. Abortus	6	73		79
Dysentery	1	38		39
Intestinal Parasites				24
Transudates and Exudates				766
Blood Examinations (not classified)				195
Urine Examinations (not classified)				280
Water and Sewage Examinations				831
Milk Examinations				112
Toxicological Examinations				1
Autogenous Vaccines				1
Supplementary Examinations				298
Unclassified Examinations				900
Total for the Month				18259
Cumulative total (fiscal year)				169749
Increase over this month last year				4116
HOUGHTON LABORATORY—				
Examinations made — Total for the Month				2029
Cumulative Total (fiscal year)				17541
Increase over this month last year				3
GRAND RAPIDS LABORATORY—				
Examinations made — Total for the Month				7073
Cumulative Total (fiscal year)				73421
Decrease over this month last year				538
Typhoid Vaccine Distributed, c. c.				2608
Diphtheria Antitoxin Distributed, units				26855000
Diphtheria Toxin Antitoxin Distributed, c. c.				34240
Silver Nitrate Ampules Distributed				6144
Scarlet Fever Antitoxin Distributed, pkgs.				59
Scarlet Fever Toxin Dick Test Distributed				49
Scarlet Fever Toxin Immunization Distributed				2776
Smallpox Vaccine Distributed, points				11935
Bacteriophage Distributed, c.c.				1232

THE JOURNAL

OF THE

Michigan State Medical Society

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All communications regarding advertising and subscriptions should be addressed to F. C. Warnshuis, M. D., Suite 1508 Grand Rapids National Bank Bldg., Grand Rapids, Michigan.

JULY, 1929

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon.

EDITORIAL

POST-GRADUATE CLINICS

The post-graduate program as announced in the April number of this Journal and the program of the second annual post-graduate clinics which appeared in the June number, have proved a real success, not only in the way of increasing popularity with the medical profession as manifest by the attendance, but in the enthusiasm and interest shown as well.

This post-graduate movement inaugurated sometime ago is filling a need in this state in the way of providing short intensive courses for many of us almost at our own door. There is an old saying that the best way to learn is to teach. The presence of a small group of earnest physicians is a stimulus to the instructor so that we have an interaction of minds so to speak.

The intensive two-day clinic which took place on the 18th and 19th of June provided a somewhat varied assortment of subjects both medical and surgical. Each clinician was a master in his particular field. As announced in the program, the sum total of effort put forth in the latter part of May and June is for professional betterment, and after all, when it comes to establishing right relations with the public, probably it cannot be done to better advantage than to seek higher qualifications in the art and practice of our profession.

OSTEOPATH BILL VETOED

The June number of this Journal contained news to the effect that the Governor had vetoed the osteopath bill. Governor Green has been placed in positions since his gubernatorial term that call for a great deal of courage and independence on the part of any one man. When both Houses of the Legislature agree on a certain bill or piece of legislation, it takes a lot of courage to oppose the group action of men who are the representatives of the people. And yet the very fact that the power of veto rests with the Governor, who is also the people's choice, presupposes that he must at times exercise this prerogative as a check to ill-advised or ill-considered legislation. In vetoeing the osteopathic bill the Governor has exercised that right, in the interest of the people of Michigan.

For several decades strenuous efforts have been put forth to advance the standards of medical education in this state and to eliminate the unfit. This editorial is not a criticism of the osteopath, far from it. An osteopath is a specialist and so far as his specialty can contribute to public welfare it has a right to exist. When, however, the osteopath seeks to exploit the whole field of medicine, in the interest of public safety it is time to call a halt. The enactment of such a law as proposed would introduce two standards of medical practice which would in itself be an anomaly, that circumstances do not justify.

The Governor deserves the highest commendation in this act of conservation of the medical standards of the state.

THE NEWER MEDICAL VIEWPOINT

The paper by Dr. Lewellys F. Barker entitled "The Etiological Approach to the Study of Disease," which appears in this number of The Journal is very timely; it is one that will appeal to every one engaged in the practice of medicine and surgery and allied specialties. We have first a philosophic discussion of the word eti-

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ology. The writer says that descriptive science is made up of the mental constructions based upon sense - impressions. Causal thinking depends upon the construction of analogies of regular sequences of these sense-impressions. However, this does not always hold, hence the fallacy in the phrase *post hoc ergo propter hoc.* He cites examples of "causal" thinking, also examples illustrating the inadequacy of it. The other mode of reasoning is designated "conditional" thinking. Any process in nature is dependent upon a large number of conditions, never upon a single one. In other words, it is wrong to single out one condition and assume it to be the sole cause of a process. He speaks of a number of writers who urge the abandonment of "causal" and the adoption of "conditional thinking," with whom, however, he disagrees. He quotes approvingly Fischer who said, "If there were only 'conditional thinking' in existence. 'causal thinking' would have to be discovered, for it is essential not only for theory but for practice." The importance of causal thinking appears in the fact that it presupposes an evaluation from the standpoint of the enquirer of the relative importance of the conditions concerned in the origin of any given process or event. Dr. Barker gives several illustrative examples. Both "causal" and "conditional" thinking have their place in the reasoning process; the former acting in a selective way in regard to the relative importance of the various conditions.

* * *

Dr. Barker goes on to define health and disease and emphasizes the fact that the terms are abstractions. The adjectives derived from them describe certain states in persons. His conclusion here is contained in the extract which appears on the cover of this Journal.

* * *

Going on then to discuss external and internal causes of disease, the essayist says that the internal cause is seen when we have inadequate response to a normal environment; external cause is that which appears when the inadequate response lies in the surroundings.

Dr. Barker introduces a phase of discussion in his paper that has received a great deal of attention from clinicians of late. Every human being develops from a zygote. The developed organism or phenotype consists of two fundamentally different parts. First the genotype which is derived from the two parents and consists of inherited potentialities; and secondly the substance that converts inherited potentialities into realities. The second is known as paratype. The whole make up of the realized organism, that is, the genotype and paratype, are spoken of as the human constitution. It will be seen, then that we have bio-variants since no two phenotypes are exactly alike. In other words there are no two genotypic patterns exposed to the same environment. As examples of morphological personal variants the author cites habitus asthenicus with its special disposition to tuberculosis, and on the other hand the habitus pyknicus with its special disposition to chronic hypertension, to obesity and to manic-depressive psychosis.

By studying the subject from this viewpoint we are enabled to investigate the causes and pre-disposing conditions of disease. "Medical research and medical practice" says the writer, "are being profoundly modified by the application of new methods of study of human phenotypes and their modes of response." So great, however, is the tendency to stress the genotypic (hereditary) factors that there is a disposition to relegate the paratypic to the background, except the case of unmistakable infection or parasitic invasion.

According to Dr. Barker the physician of today is compelled to acquaint himself with the psychic and social history as well as the physical history of the patient. The practitioner finds himself more or less handicapped without some knowledge of the motivations of human conduct, of the desires that men strive to gratify and of the social conflicts that may arise during the struggle for the satisfaction of these desires. It is therefore a duty of medical men to study the psycho-physical unit as a whole. This is not an attempt to abstract or to summarize Dr. Barker's paper. However, it is seldom a medical Journal has the opportunity of printing a paper with such a wide appeal. Attention is called also to the other interesting contributions of a more specialized character which appear in this number of the Journal.

LEGAL RESPONSIBILITY OF "ATTENDING" PHYSICIANS

Considering the large number of members of the medical profession who are connected with hospitals in the capacity of attending physicians, the individual liability of physicians for acts committed in hospitals is a matter demanding clear thinking. There is a current opinion to the effect that physicians do not require to

carry protective insurance covering cases which they treat in hospitals. Nothing could be further from the truth.

Physicians who are on service even in free clinics should carry individual insurance; even a doctor serving a hospital as a part-time roentgenologist for which he receives a salary from the hospital should not depend upon the fact that he is to a certain extent an employe of the hospital, to protect him in the event of an accident to a patient or a bad result in treatment.

According to an opinion* by Stryker, Counsel for the Medical Society of the State of New York, "There is no relation of master and servant, or principal and agent, existing between a hospital and the resident or visiting physicians connected with the hospital. The law regards the physicians as independent contractors, personally liable for their own wrongs. In a leading case in the Court of Appeals of the State of New York, in discussing this relationship it was said:

'The hospital does not undertake to act through them (the physicians), but merely to procure them to act upon their own responsibility. . . And so there is no such relation between the corporation (the hospital) and the physicians and surgeons who give their services at the hospital. It is true the corporation has power to dismiss them; but it has this power not because they are its servants, but because of its control of the hospital where their services are rendered. . . The wrong was not that of the hospital; it was that of physicians, who were not the defendant's servants, but were pursuing an independent calling, a profession sanctioned by a solemn oath, and safeguarded by stringent penalties. If, in serving their patient, they violated her commands, the responsibility is not the defendant's (the hospital); it is theirs. There is no distinction in that respect between the visiting and the resident physicians."

We have referred this opinion to Dr. F. B. Tibbals who is Chairman of the Medico-Legal Committee of the Michigan State Medical Society, and have received the following reply which gives clearly the situation as it obtains in the State of Michigan. "Regarding the individual liability of physicians for acts committed in hospitals, let me say that under the Michigan law, a physician is liable for his acts wherever committed. I do not think our Michigan hospitals, except perhaps the private hospitals, carry liability insurance, for all those incorporated as charitable, not for private gain hospitals, are exempt from suits by patients. The internes and nurses, however, employed by and furnished by the charitable hospitals for assistance of physicians attending patients in these hospitals, or operating upon patients in these hospitals, are the agents of the hospitals and not of the doctors, hence when a foreign body is left in the wound, hypodermic needle broken off under the skin, or a hot water bag applied too hot, and it can be clearly shown that the blame is on the nurse or interne and not on the doctor, the doctor cannot be held legally responsible. Aside from these exceptions however, the doctor may be held blameworthy for all his acts occurring in hospitals."

* Vol. 29, No. 9, New York State Journal of Medicine.

X-RAY FILMS

We understand that considerable attention has been devoted to safety in the storage of X-ray films, particularly in the hospitals of this state. In many hospitals the provision is about as satisfactory as ingenuity can devise. The storage of films in private offices is another matter, and the advice we have to contribute is to reduce the quantity of used films to the minimum. Films constituting gastrointestinal series have very little value so far as the patient is concerned after two years, particularly if a careful reading has been made at the time and filed away. Films made of the chest are more valuable and in some cases should be retained over a term of years, for sake of comparison from time to time. Films made for the sake of determining bone injury have a medico-legal value whether the findings are positive or negative. They should be retained until released by the statute of limitations which renders them of no further value in damage suits. In the case of children this period is two years after the child has become of age. Then there is another class of film that which registers some rare or interesting pathology or abnormality. This class has a personal value for the roentgenologist or surgeon and internist. The amount of film material which might be eliminated from filing cabinets every two years is very large and its disposal would aid not only in promoting safety but in economizing space as well.

Many photographers are wont to store negatives until a vast accumulation results. These are a source of danger in the case of fire. One prominent photographer has informed the writer since the Cleveland disaster that he has disposed of half a ton of old negatives. Such material increases

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the fire hazard in down-town office buildings in which photograph studios are located—a danger that is apt to be overlooked. Elsewhere in this number of the Journal appear definite directions for storing films. This information is supplied by one of the largest film manufacturers in the world.

HOSPITAL CAMPAIGN A SUCCESS

The Grace Hospital, the Salvation Army and the Narcotic Educational Association, all of Detroit, launched a campaign from May 12th to the 24th for funds for the erection of a number of hospital units—nine structures in all. The fund sought was $3,000,000; namely, $1,850,000 to the Grace Hospital; $1,000,000 to the Salvation Army, and $150,000 to the Narcotic Educational Association.

Deserving of special comment is the manner in which this campaign was received by the public. Probably no similar venture within recent years was achieved with less effort. By May 24th, the sum was over subscribed. Those who were immediately concerned with the solicitation of funds found their tasks particularly pleasant. There are good reasons. In the first place the Salvation Army, regardless of denomination or creed, from its inception has had a strong appeal. The objective as announced by Dr. Warren L. Babcock of Grace Hospital of providing a hospital that would take care of people of moderate means at a price they could afford to pay, had likewise a strong appeal. It has been more or less a matter of wonderment among the laity why the cost of hospitalization should be so high when it is considered that the majority of hospitals are tax exempt and therefore at least semi-public institutions. The presentation of the hospital situation by the manager of Grace Hospital went a long way towards casting light upon the whole hospital situation. While Detroit is avowedly a leader in industry it is still far behind in the matter of hospital accommodation, all the hospitals having had waiting lists during the past year.

Consideration for the respected citizen of moderate means, in the erection of these hospital units, has been well received by the medical profession of Wayne County, than whom no one is in a better position to judge the merits of the case. Grace Hospital, the Salvation Army and the Narcotic Educational Association are to be congratulated on the outcome of this building campaign.

DOC BROWNELL AND JIM MUNRO

MALAR BONE, M. D.

"Why don't you pay me what you owe,"
Said Doc Brownell to Jim Munro,
"You've sold your wheat and corn and rye
"And I've got gas and clothes and food to buy."
"Jest take yore bill along to —ell."
Said Jim Munro to Doc Brownell,
"My kids is well and so's my wife.
"I never felt better in all my life,"
Said Jim as he puffed on an old cob pipe
And munched an apple not quite ripe.
Then old Doc smiled, his eyes aglow,
And said, very kindly and also slow:
"Let's not quarrel in all this heat
"Just come inside, I'll stand the treat."
Then to the soda squirt he said:
"Two bottle off the ice, labels all red,
"For a coat of arms the devil rampant,
"Jim will sure drink all that I can't."
All his bottle and most of Doc's went down Jim's throat

And he smacked and grunted like a red haired shoat.
"Thanks Doc," he said, "I was thirsty and hot
"But that thar fiz teched the spot."
Jim went home, unhitched his team, fed the stock,
Ate his supper and went to bed at eight o'clock.
About nine that night Doc's telephone rang.
As he went to the phone he almost sang,
Jim's wife he knew was on the line
And the plans he'd made were coming on fine.
"Jim's groaning with pain and tossing about,
"Please Doctor, won't you come right out?"
Of course Doc went, wanted to go,
But he couldn't drive straight for laughing so.
He got there soon and went inside.
Where the doors and windows were open wide,
Where an unpleasant odor filled the room
And a tallow candle just pierced the gloom,
Lay stretched on a bed what was left of Jim,
With his face gray and wan in the light that was dim.
Doc felt his pulse and looked him carefully over
Then said in a voice both sad and sober:
"Poor old Jim, you were once my friend,
"I hate to see you approaching the end.
"Four hours ago you were hearty and well
"But now—the Lord alone can tell.
"I know where you will be when you are dead,
"So I'll just send my bill right on ahead."
Jim looked scared and could hardly speak,
His big strong voice had grown so weak.
"Please save me Doc, you shore know how.
"I'll pay yore bill, I'll pay it now.
"Git my pants, Ma, and pay his bill
"Give him a dollar for ev'ry pill."
Doc gave him some drops that helped him a heap
And told him to lie still and he'd soon go to sleep.
He put on his hat and started for town,
But stopped at the door and said with a frown:
"Bear this in mind—when I ask you to pay
"Think very carefully what you should say.
"That fiz you drank, and those green apples, too,
"Were mighty good for me, but awful bad for you."

—From the Journal of the Kansas Medical Society.

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THE EDITOR'S EASY CHAIR

GLORIA VICTIS

Dr. Ales Hrdlicka, American anthropologist connected with the United States National Museum, has undertaken to prove that eminent men of science are men of sound bodies as well as sound minds, contrary to the belief once held that their minds were occasionally housed in weak bodies. In other words each has *mentem sanum in corpore sano.* He made physical measurements on 100 members of the National Academy of Science. If he were to include all men of science who have earned a place on the beadrole of fame his findings would indeed be more interesting. We are, however, inclined to discount findings based on the study of only one hundred cases.

Instead of finding strong minds in weak bodies, Dr. Hrdlicka declared that he found strong minds linked with strong constitutions. The head, hence presumably the brain of the Academy members, is on the average larger than the head of the average American. Intensive mental work evidently does not tend toward a shortening of the life of the worker, as concluded from the ages of the scientists studied.

Parenthetically, an item of news appears as I write to the effect that Dr. Daniel Smith Lamb autoptician of the United States army died at the advanced age of eighty-five years. Lamb had performed autopsies on President Garfield and on Garfield's assassin. In his last will and testament, Dr. Lamb declared it his wish that a careful post mortem examination be made of his body by some competent person, naming Dr. Hrdlicka as his choice. To assist in obtaining accurate information Dr. Lamb related his health history. As a child he had sore throat and "colds" and varioloid measles. During his adult life he had typhoid, acute rheumatism, labyrinthine deafness, pneumonia five times, influenza, chronic laryngitis and chronic ulcer of the nasal septum.

This is all very interesting. One cannot help calling to mind also the work of such men as Steinmetz, Darwin, Joseph Priestly, Herbert Spencer, Trudeau, Bichat, Laennec, John Hunter, William Harvey and Sydenham. Sydenham suffered from gout thirty-four years and wrote an unsurpassed description of its symptoms, and if we might go outside the domain of science, Kant the philosopher, Scott, Byron, DeQuincey, Stevenson, Thoreau all suffered greater or less physical discomfort. The victim of gout, even the genius, is apt to be eccentric and irrascible. Biographers mention this disease quite frequently. It carried with it no approbrium other than that the offender was probably a high liver.

Speaking of gout, Osler claimed it to be somewhat common among persons of great mental or bodily vigor and mentioned such distinguished members of the medical profession as Jerome Cardan, Italian mathematician and professor of medicine at Padua in the sixteenth century, and the great English Hippocrates Sydenham. He disagreed with Sydenham, however, that "more wise men than fools are victims of gout."

The list of suffering genius might be extended indefinitely. All suffered physical handicaps which they capitalized, or, as Dr. Charles Mayo once said, they denied adversity its toll and used misfortune as a stepping stone. They not only made an impression on their own generation but on succeeding generations as well. They were not of an age but of all time. We are reminded of Emerson's essay on Compensation.

Havelock Ellis in an interesting study of British genius devotes a chapter to pathology in which he claims that, "at least ten per cent of our eminent British persons suffered from a marked degree of ill health, amounting to more than minor discomfort during the years of their active lives." Some of them, notably Darwin, were so badly afflicted as to be unable to work for more than two to three hours at a time.

Not that disease ever produced genius; far from it.

The psychology of the consumptive is especailly interesting. It is summed up in the phrase *spes phthisica.* There is a mental exaltation which disposes such persons to form vast plans and to endeavour to carry them out with feverish activity. In literature Robert Louis Stevenson is a good example. His stories are comparatively short but vigorous in their conception. The consumptive is characterized by a restless versatility though his genius is something of the feminine order. Havelock Ellis has shown that at least forty personages in Great Britain who are universally recognized as geniuses were afflicted with tuberculosis.

Many individuals who afterwards became eminent were delicate during their childhood. Among the number might be mentioned Hobbes and Locke the philosophers, Newton, Priestly who discovered oxygen, Keats and Charles Wesley. Elizabeth Barrett Browning might also be mentioned as a borderline tuberculosis patient. Sir Wilfrid Laurier, Late Premier of Canada who died a septugenarian, had pulmonary hemorrhages during his early manhood. Trudeau's career is too well known to require comment. Thomas Masson, American author, and editor also gave a history of pulmonary hemorrhages. Many such persons die of old age after long useful lives, justifying Oliver Wendell Holmes' contention that if one wished to live to an advanced age he should be a chronic invalid. The poet Goethe has said, "By appointed hours we enter into life, our days are numbered which make us ripe to see the light, but of the duration of our life there is no law; the weakest thread will sometimes spin itself to unexpected length while the strongest is suddenly cut asunder by the scissors of the fates."

FILM FILING AND STORING

Eastman *Dupli-Tized* X-ray films are now furnished coated on two types of base—(1) cellulose nitrate base, which was the only type available originally and (2) cellulose acetate, this latter film being known as *Safety* film.

NOTE—These recommendations and instructions may be followed by users of the Agfa films.

Eastman *Safety Dupli-Tized* X-ray films present no greater fire risk than so many paper records and may be filed and stored in any convenient manner. Cellulose nitrate films present a certain amount of fire risk which should be provided for.

The following recommendations apply to cellu-

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lose nitrate films only and represent this company's view as to the proper precautions for minimizing fire danger from these films.

RECOMMENDATIONS FOR HANDLING AND STORING X-RAY FILMS

(Cellulose Nitrate Base)

General Suggestions:

(1) In all rooms where X-ray films are stocked, handled or filed, smoking should be strictly prohibited and conspicuous "NO SMOKING" signs posted.

(2) A metal can (preferably with spring hinged cover) should be provided for all waste negative and film scrap, and at no time should these be permitted to accumulate and lie around on tables, benches or floor.

(3) It is best, both for the matter of freshness of films and reducing fire hazard, that the stock of unexposed films should be kept at a minimum —the actual quantity depending on the ease of receiving fresh supplies from the dealer or distributor. Such stock should be kept in a cool, dry place out of the way of ordinary room traffic, in a metal box or can. A lead-lined metal box or can is suggested, as this also prevents damage by X-rays.

(4) In rooms where films are filed or handled there should be no flames or any other than standard electrical fixtures. All open lamp bulbs should be protected from breakage by suitable guards. A hand fire-extinguisher should be in each room where films are handled. Any of the standard approved portable 2½ gallon extinguishers will be satisfactory. Darkroom and other doors should be arranged so as to make egress from such rooms easy. It is also desirable, if possible, to have such rooms protected by automatic sprinklers.

(5) Film negatives should be filed as soon as possible in heavy manila envelopes, either singly or by case, and the filing of these so arranged that it is convenient from time to time to weed out useless negatives. The storage of film negatives in bulk without enclosure should be prohibited, and in all places where films are handled or stored there should be no storage of other inflammable materials and no litter or accumulation of waste paper.

(6) Illuminators should be so designed that the diffusing glass is not hot to the touch and there should be no unnecessary display of film negatives in lighted illuminators. Negatives set up for viewing should be confined to those actually being inspected.

(7) If it is necessary to keep an active file of films for a current period of about a week in the actual X-ray room, these should be kept in a metal container. Such a file should be limited to about 50 pounds of films.

(8) Films should not be stored in the basement of any establishment.

SUGGESTIONS FOR FILING BULK STOCK OF FILM NEGATIVES

(1) Where it is necessary to keep the accumulated results of X-ray examinations for a period of months or years, it is obviously necessary to take certain further precautions to reduce fire hazard. In the case of hospitals, where it is usually possible to secure additional space for such a purpose, a suitable room should be set aside for an exclusive and permanent bulk file of all X-ray negatives. Such a room should preferably be located at the top of the building and be of fire-resistive construction. Most modern hospitals have small rooms which could be made into virtually fireproof vaults by a few simple changes. There are only four basic requirements that should be satisfied.

1. The room should be of fire-resistance construction.
2. The room must have a direct outlet to the outer air.
3. There should be a Class B, self-closing fire door at communication to building proper.
4. The room should be additionally protected by automatic sprinkler heads operated from an adequate water supply.

As regards the vent opening in the room, this may be kept covered against the weather by glass or metal, but if such a protective device is used it should be arranged in a sash or so hinged as to open automatically in case of fire. This can be very easily arranged. If the room is not located on the top floor it is desirable in most cases to run a metal vent pipe from the outlet to the roof. The exact size of the vent depends upon the number of pounds of negatives stored and can be determined from the basic requirements that for each 1,000 pounds of film stock there should be 140 square inches of vent. Thus

A circular opening of 13½/" diameter for 1,000 lbs.
A circular opening of 9½/" diameter for 500 lbs.
A circular opening of 6¾/" diameter for 250 lbs.

As a guide in figuring poundage of stock the following table is useful:

1,000—14x17 negatives weigh approximately 118 lbs.
1,000—10x12 negatixes weigh approximately 60 lbs.
1,000— 8x10 negatives weigh approximately 40 lbs.
(Other sizes in proportion to area)

Relative to sprinkler protection; if there is no existing independent sprinkler water supply available, it will in a great many cases be acceptable to attach the film room sprinkler to the existing house water supply. There are of course standard specifications covering the necessary sizes of pipes, etc., for water supply to sprinklers, and the advice of someone in touch with these requirements should be obtained.

Where structural changes are necessary, or if it is desirable to partition off a small part of an existing room, the partition can be most satisfactorily made by using expanded metal lathing on wooden 2 x 4s. There should be about ¾ inch of good grade cement plaster on the metal lathing, and it will of course make a more satisfactory looking room and add to heat insulation by putting this plastered lathing on both the inside and outside of the room. If it is necessary to build a fire-resisting ceiling or floor, the same general type of construction will be satisfactory in most cases.

(2) In case such a room is not available and the quantity of films does not exceed a reasonable amount, reduction of the fire hazard is assured by the use of proper metal cabinets. These cabinets should be heat-insulated metal safes and be vented to the outside by metal pipes. Suitable safes of this type are available. The quantity of films which can be stored in such a manner is limited to 500 pounds in one safe and 1,000 pounds in two safes in any one room. If reduction of fire hazard only is desired, this type of safe will be generally suitable, but if it is also desirable to save as many negatives as possible in case of a fire, the addition of a suitable sprinkler head in the top of the cabinet is necessary. If a safe containing more than 250 pounds of

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films is used it should be divided into two compartments—each separately vented. In case of a fire and the flooding of the contents from the sprinkler head, it is possible afterwards to reclaim most of the negatives, which will only be wet, by soaking them in water as soon as possible. The sprinkler protected safe is the preferable system. In these safes and also in the virtually fireproof rooms previously mentioned, any convenient filing arrangement of films in envelopes may be used.

These suggestions have been carried out by a number of users of X-ray films with excellent satisfaction both as to the matter of safety of negatives and relations with underwriter bodies, and the attendant cost has not been excessive.

As regards old negatives which are no longer necessary, and film scrap; these have a salvage value, this at the present time being 12 cents per pound. Such films should be returned to us at Rochester and the amount of salvage will be promptly forwarded. There are certain shipping conditions necessary to comply with and we will be glad to forward particulars to anyone interested.

As regards special needs of any particular hospital or X-ray laboratory in the matter of film storage, we will be glad to give specific assistance in each case if details of the conditions and number of negatives made in a given time are sent to us at Rochester.

It is strongly urged that these recommendations be adopted as fully as possible, for X-ray films, thus properly considered and handled, present very little risk and it is the desire of this company to co-operate in every possible way in eliminating any danger at all to hospitals in their use of such films. These suggestions are not to be construed as applying to films in other establishments where the general considerations of use and environment are substantially different from those applying to hospitals.—Science Service.

THE PHYSICIAN'S DUTY

(Calhoun County Medical Bulletin)

The duty of the Public Health Education committee is to keep the laity informed as to the advances being made in medical knowledge, to help safeguard the public health, and to wage unceasing war on quacks, charlatans and nostrum venders, and all those who abuse the people's confidence in the name of medicine.

The public don't care for propaganda having a commercial flavor—but are genuinely eager for the basic knowledge of health.

Whether it be the printed advertisement or the ballyhoo of radio advertising programs the people are disgusted with what is thrust at them as frank advertising, but will listen eagerly to what is told them by their physician. The greatest agency for the spread of health information is the doctor himself.

Each society member should take the pains to carefully explain the details of the more or less complicated health program of today. Good public speakers on health matters are rare, and we cannot depend on them to give to our patients what they need.

Every doctor should play the part of a health instructor and by so doing add something to the defense of modern medicine.

DEATHS

DR. STUART GALBRAITH

Dr. Stuart E. Galbraith, one of the most prominent members of the Oakland County Medical Association, died Sunday at 7 a. m. at his home, 86 Williams street.

Although he had been afflicted with diabetes for some time and for the past two months had given up active practice, his death, due to a stroke, came as an unexpected shock to a community where he was loved and respected by a wide circle of friends and acquaintances.

Dr. Galbraith was the leading exponent of the X-ray in Pontiac and for several years directed X-ray work in the Pontiac City Hospital, Oakland County Tuberculosis Hospital and St. Joseph Mercy Hospital.

Dr. Stuart E. Galbraith was born in Pontiac April 30, 1873, the son of Dr. Franklin B. Galbraith, an Oakland County citizen distinguished as a physician and surgeon.

The old Galbraith home, 17 East Huron street, long the center of the social life of early Pontiac, was later purchased by the Pontiac Board of Commerce and is now used by that civic organization.

Dr. Stuart E. Galbraith attended the Pontiac public schools, graduated from the Michigan Military Academy at Orchard Lake and entered the University of Michigan. There he completed the literary and medical courses, graduating from the latter in 1899.

Upon graduation he immediately began practice with his father in Pontiac until the latter's death in 1903, since which time the son had carried on the practice.

He was one of the first to become interested in the X-ray as a medium for diagnosing as well as treatment for disease and soon became so proficient that a large portion of work in this city was turned over to him by the medical fraternity. The volume of this work grew so large that within the past few years he had devoted to it almost all of his time.

Dr. Galbraith was of a retiring disposition, unlike his father who served in many public positions including army service as a surgeon, mayor of this city and member of the State Senate. Entirely devoted to his profession, he gave to it the best years of his life. He shunned publicity, was content to serve the public, loved his home life and family and had the respect and confidence of all.

He was married in 1907 to Mary Wisner, member of a family whose name is prominent in Michigan history. To this union was born three sons, Wisner and Stuart, Jr., now attending college, and Robert, at home.

Surviving are the widow, a sister, Mrs. James H. Harris of 45 Franklin boulevard, and the three sons.

The funeral is to be held from the home, 86 Williams street, Wednesday at 4 p. m., Rev. Bates Burt of All Saints Episcopal church officiating.

Dr. Galbraith was a member of the Delta Kappa Epsilon college fraternity, the Pontiac Rotary club and Pontiac Masonic bodies.—Pontiac "Press," June 17, 1929.

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NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

Dr. Ferris N. Smith, Grand Rapids, returned June 10th from his annual European trip.

Dr. Guy L. Kiefer, Lansing, returned June 2nd after a two weeks' outing at Atlantic City.

Dr. B. R. Corbus, Grand Rapids, attended the Kentucky Derby at Louisville. No reports on winnings.

Dr. C. S. Gorsline, Battle Creek, spent two weeks in western sight seeing previous to the A. M. A. meeting in Portland.

The Committee on Civic and Industrial Relations, under the chairmanship of Dr. H. S. Collisi held a meeting in Detroit on June 19th.

Dr. G. L. LeFevre, Muskegon, President of the State Board of Registration, accompanied a golf foursome that played in and about New York City for the first week in June.

Dr. Frank A. Kelly, Detroit, will attend the annual meeting of the British Medical Association in Manchester July 22-26. He is on the program for opening the discussion on Spinal Anesthesia.

Jackson members, by reputation, will provide a most enjoyable time at our annual meeting in September. We urge a large attendance. See the August issue for program features.

Attention is called elsewhere in this issue to the program of the meeting of the Upper Peninsula Medical Society that is to be held in Ironwood in August. A cordial invitation is extended to all our members.

COMMUNICATIONS

Editor of The Journal of the Michigan State Medical Society:

An editorial writer in your June number is mistaken when he includes Christian Scientists among those who "have sought independent (licensing) boards" from our State Legislature. The Christian Scientists of Michigan have neither sought nor advocated any such legislation. The medical bills recently considered by the Legislature (Senate Bills 160 and 161) contained clauses which safeguarded the right of Christian Scientists to practice their religion, and we did not oppose these bills at any stage. Your contributor can obtain confirmation of this from Dr. Guy L. Kiefer. I warmly agree with what is said elsewhere in your June number about Dr. Kiefer's devotion and courtesy in his legislative activities.

Francis Lyster Jandron,
Committee on Publication for Michigan.

CO-ORDINATE MEDICAL AND DENTAL STUDIES IN NEW GROUP AT YALE

A new plan for bringing medicine and dentistry into closer relationship will be followed by a special study group at Yale University, President James R. Angell announced today. For the first time, medical specialists will make a comprehensive study of the teeth. The purpose of the group will be to create a group of medical specialists in teeth, just as there are medical specialists in diseases of other organs of the body.

Heretofore the teeth have been left to dentists, whose work is chiefly a technical procedure. In recent years the connection between teeth and various bodily ills, such as arthritis from infected teeth, has been recognized. Dentists have included more and more study of medicine in their professional schools. Still, they have not cared to encroach on the treatment of disease elsewhere in the body, which is the province of physicians, and similarly physicians have not gone far into the study of diseases of teeth, mouth and gums. The gap which has consequently occurred will be bridged by the new course at Yale.

The study group will be composed of physicians, surgeons, radiologists, bacteriologists, dentists and pathologists, with Dr. M. C. Winternitz, dean of the Yale School of Medicine, as chairman. The project has been made possible by a grant from the Rockefeller Foundation. Every year from two to four graduates of dental schools will be admitted to the School of Medicine to continue their medical studies and to work with the group studying dental diseases. The new group of specialists to be developed will not replace dentists but will be an additional corps of scientists studying and treating disease in human beings.—Science Service.

FOUR FACTORS RESPONSIBLE FOR TUBERCULOSIS DECLINE

Four factors responsible for the gratifying decline in the tuberculosis death rate during the last thirty years are the elevated standard of living, improved sanitary control, more adequate hospital facilities, and public health education, stated Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Co., addressing the meeting in Atlantic City on May 29 of the National Tuberculosis Association. Continuation of the public health and social service activities responsible for much of the decline will probably further decrease the tuberculosis death rate to a negligible point, was the encouraging prophecy he put forward.

"I firmly believe," he said, "that by continuing and strengthening the same activities which have been directed against tuberculosis in the past, we can still further reduce the incidence of this disease and ultimately eliminate it from the list of significant causes of death."

The lowest tuberculosis death rate on record was chalked up for the year 1928. The decline since 1900 has been steady and ever-accelerating. Thirty years ago tuberculosis brought death to nearly two and a half times as many persons per 100,000 as now.

"In a single year 140,000 persons will survive who would have died from tuberculosis, had the rates of 1900 prevailed. . . . There is no indication that this state of affairs will change or that forces beyond the control of man will cause the mortality curve to swing upwards," Dr. Dublin stated.—Science Service.

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COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

Frederick C. Warnshuis, M. D.
Secretary Michigan State Medical Society

ANNUAL MEETING

Our 1929 annual session will be held in Jackson on September 17-18 and 19. The House of Delegates will convene at 10:00 a. m. on the 17th. Hotel headquarters will be the Hayes hotel. Registration, exhibits and section meetings will be in the Elks Temple and the St. Paul's parish house, directly across the street from the Elks Temple. These two buildings are two blocks from the Hayes and Otsego hotels.

The August Journal will contain the preliminary program announcement and further details.

SCIENTIFIC EXHIBIT

The Council has directed that a Scientific Exhibit be arranged for our Annual Meeting. Dr. German, Pathologist of Blodgett Hospital, Grand Rapids, has kindly consented tot assume the direction of this exhibit. Hospitals, clinics, pathologists and members are invited to participate and arrange with Dr. German for the exhibition of interesting specimens, X-ray films, laboratory experiments or studies or any clinical reports that are of merit.

Awards to the amount of $200.00 will be made to the first, second and third most meritorious exhibits. We bespeak our members co-operation with Dr. German in order that this feature of our annual meeting may be of instructive value.

INVITATIONS FOR ANNUAL MEETINGS

The Council has directed that cities and county societies when extending invitations for the next annual meeting shall cause their invitations to be accompanied with a definite statement setting forth the available auditoriums, their rental price and the hotel accommodations. This information is important in order that the House of Delegates may be in better position to determine which invitation affords the necessary local facilities.

CLOSED SHOP

For the first time in seventeen years the office of the Secretary will be closed from July 2nd to July 17th. During that period the Secretary will be in attendance at the American Medical Association Annual Session in Portland. The office help will be on their vacations. If your letters fail to receive prompt replies the above announcement will be explanatory.

MEMBERSHIP CARDS

The issuance of membership pocket cards was discontinued the first of the year. Certificates of membership were mailed to every member whose dues were remitted by county secretaries. This announcement is repeated to answer the many inquiries received relative to the pocket card.

MINUTES OF THE MEETING OF THE JOINT COMMITTEE ON PUBLIC HEALTH EDUCATION HELD IN ANN ARBOR, MAY 20, 1929

1. Present: Doctors Jackson, Hirschman, Cabot, Huber, Henderson, MacCraken, Bruce, Griswold, Landers, Stapleton, Dempster, Lyons, Foster, Thompson, Olin, Sundwall, Biddle, Isaminger, and Mr. C. A. Fisher, Miss Emilie Sargent representing the Michigan State Nurses' Association; Miss Louise Kinney, representing the American Red Cross, and Miss Lera B. Curtis, representing the State Department of Public Instruction.

2. Reading the minutes of the previous meeting held in Ann Arbor, October 8, 1929, Mr. Henderson.

3. Report of Health Education Program for 1928-1929, Mr. Henderson. According to this report, the program as carried out by the Joint Committee for the year 1928-1929 was especially satisfactory as relating to the number of health lectures given and as to the co-operation extended by both the doctors and dentists of the state and the principals of the high schools under whose auspices the high school assembly programs have been conducted.

Mr. Henderson read a number of letters of appreciation and commendation from

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high school principals, doctors, and others who have taken part in the program. On the whole, the reports received from high school principals and local committees have been exceptionally gratifying.

Following is a brief summary of the activities for the year:

Total number of doctors, dentists, and others taking part in the Health Education Program	151
Number of high schools in which assembly programs were conducted	92
Total number of different high school students who received instruction in these assembly programs	27,000
Total number of health lectures given in high schools, Parent-Teacher Associations, and other organizations	584
Total attendance upon health lectures throughout the state	153,612

4. Report on the health essay and poster contest, Mr. Fisher. Twenty-five per cent of the schools in which programs were given took part in the contest. A total of 87 essays and posters were submitted by high school students. The posters were judged by a committee consisting of Messrs. Bittinger and Fowler of the College of Architecture, and Dr. Hickey of the University Hospital, who awarded first, second, third and fourth honors as follows:

First, Dorothy Hoover, Adrian High school.

Second, Frances Drolet, eighth grade, Central Junior High school, Battle Creek.

Third, James Tunison, ninth grade, T. L. Handy Junior High school, Bay City.

Fourth, Noel Milham, Central High school, Kalamazoo.

The essays were graded by Messrs. Walter of the Rhetoric Department, and Haines of the Journalism Department, and Dr. Hickey of the University Hospital, honors being awarded as follows:

First, "Keys to Health," by Helen Ellis, Flint Central High school.

Second, "Facts About Our Friends, the Teeth," by Cecelia Peikert, St. Andrews school, Saginaw.

Third, "Infant Mortality," by Ann Hinzenga, Christian High school, Grand Rapids.

Fourth, "The Heart and Prevention of Its Ills," by Geraldine Kelly, St. Frederick High school, Pontiac.

Pursuant to action taken at the October 8, 1928, meeting of the joint committee, $100 was authorized to be appropriated for prizes for the poster and essay contest, as follows: First prizes, $20; second, $15; third, $10, and fourth, $5.

On motion of Dr. Bruce, seconded by Dr. Jackson, Mr. Fisher's report was accepted and the secretary was instructed to draw on the treasurer of the publicity fund for $100 for the eight prizes to be given.

Mr. Fisher also raised the question of an appropriation for a bulletin, which publication should contain the cuts of the prize posters and copies of the prize essays, the names of the speakers taking part in the program, the schools under whose direction the contests were conducted, and a statement of the conditions governing next year's contest.

On motion of Dr. Jackson, seconded by Dr. Bruce, the committee was authorized to issue a bulletin, as per Mr. Fisher's suggestion, with the understanding that the cost of the bulletin should not exceed $250. Dr. Bruce was instructed to find out as to whether or not the proposed bulletin could be issued as a reprint from the State Medical Journal.

5. Report on Extension Health Lectures for next year, Dr. Isaminger. This report included a brief account of the work covered in the ten counties in which high school assembly programs are now conducted. Dr. Isaminger informed the committee that eight new counties would be taken in next year, which territory he had already visited. Report accepted.

6. Report on lecture outlines for next year. Dr. Cabot expressed his approval of three of the lecture outlines submitted, but raised some questions as to the content of the lecture outline on Body Poisons. Doctors Jackson, Olin and Griswold supported Dr. Cabot's criticism of the lecture outline on Body Poisons. After some little discussion of the outline in question, Dr. Jackson moved that the members of the Joint Committee be requested to send criticisms and suggestions as to changes in the lecture outlines to the secretary within the next three weeks, with the understanding that the secretary would submit the suggestions to the standing committee on publicity. Motion prevailed.

7. Dr. A. C. Thompson of Detroit, who was asked by the secretary to prepare the Dental Lecture Outline for next year, gave some valuable suggestions, based on his experience in the Detroit schools, as to methods of preparation of outlines and their use in connection with school programs. Upon receipt of Dr. Thompson's outline, it will be submitted to the standing committee on Dental Lecture Outlines, this committee consisting of Doctors C. J.

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Lyons and W. R. Davis, and the secretary of the joint committee.

8. Report on publicity. Dr. Bruce read a carefully prepared report which outlined the newspaper publicity program for the past year and which also contained valuable suggestions as to publicity activities in general as relating to the entire health education program. The report was accepted with the recommendation that it be published in the State Medical Journal.

9. The secretary read a communication from Dr. Ernst regarding proposed legislation on the subject of mental hygiene. Dr. Bruce moved htat the matter be referred to the publicity committee. Motion prevailed.

10. It was moved and carried that the next meeting of the Joint Committee be held in Ann Arbor in October, 1929, subject to call by the secretary.

The meeting adjourned.

W. D. Anderson, Secretary.

May 27, 1929.

CONTRACEPTIVE ADVICE

An inquiry was received from a member relative to legal restrictions prohibiting him from imparting contraceptive advice to a patient. As search was made of the law we were quite startled when the following facts were uncovered.

National Laws: The United States mails, or any common carrier cannot be used to send information or material having to do with the control of conception directly or indirectly. There are five articles in the Criminal Code covering these prohibitions: 102, 211, 245, 305 and 312. These laws include scientific books, pamphlets, journals, illustrations, mechanical devices, drugs or prescriptions. There are no exceptions as to doctors.

State Laws: Can a doctor impart advice or instructions as to contraceptive methods? In fifteen states he cannot do so freely. In six states he can do so on certain exceptions. In twenty-eight states he can do so more or less unimpeded. State restrictions vary. In ten states no one may give contraceptive advice or tell where it may be obtained. Medical colleges and books are exempt in Nebraska, Pennsylvania and Missouri, and medical books in Kansas.

And so one finds in the statutes varying enactments that are most stringent. In our quest we were unable to uncover any specific reference to the subject in our Michigan laws. We then wrote the attorney general and received the following reply:

Michigan State Medical Society,
1508 G. R. National Bank Bldg.,
Grand Rapids, Michigan.
Dr. F. C. Warnshuis, Secretary.

I desire to acknowledge receipt of your letter of May 24 relating to the subject of birth control.

I find that the only laws in this state which relate to that subject are Sections 15224 to 15226, inclusive, of the Compiled Laws of 1915. These sections relate to the giving of medicine for the purpose of producing an abortion.

Section 15512 of the Compiled Laws of 1915 prohibits the advertising in any manner of any medicine, drug, compound, appliance or any means whatever whereby women may be cured or relieved, or miscarriages or abortion produced.

Section 15524 of the Compiled Laws of 1915 prohibits a druggist or dealer from selling any drugs or medicine known to be designed and expressly prepared for producing an abortion, only upon the written prescription of an established practicing physician of the city, village or township in which the sale is made.

I understand, however, that there are federal statutes relating to the publishing of such information.

Very truly yours,
Wilber M. Brucker,
Attorney General.
By Emerson R. Boyles,
Deputy Attorney General.

Apparently our Michigan statutes are silent upon the subject so that Michigan doctors are only amenable to the federal laws which relate to the use of mails and common carriers.

ADVERTISEMENTS

Our members are requested to observe: Without the income received from our advertisers the present Journal would not be possible. Without advertisers, to continue to send you the present sized Journal it would be necessary to increase our dues four dollars per member. Income from advertisers means a bigger, better Journal with no increase in dues.

Advertisers are not paying for advertising space simply to furnish you the present Journal. They expect, and rightly so, a return upon their investment in the form of your business and patronage. This you owe to our advertisers. They merit and should have first call on your business. They should be the recipients of your orders.

If you are buying instruments from a firm that does not advertise in your Journal, you should discontinue doing so. Our instrument advertisers can serve you just as well, just as cheap and more reliably than can the non-advertiser. Your electrical equipment can be purchased from our electrical advertisers to better advan-

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tage than from non-advertisers. The prescribing of drugs, preparations and foods advertised in our Journal will give you better results than those of other firms for we accept only approved preparations. Our institutional and hospital advertisers will serve you and your patients better than will non-advertised institutions or supply houses. You are urged to recognize these facts.

The point stressed is that you have an obligation and a duty that you owe to the advertisers who make your Journal possible. There is a pressing need that you discharge that obligation.

If a salesman calls on you ask him if his firm advertises in your Journal. If the answer is in the negative then withhold your order and give it to the salesman or firm that does use space in our advertising forms. In addition to this read our advertising pages each month. You will find many interesting free offers for samples, literature, etc. Ask for these samples and literature and tell them you saw their add in your Journal. If you haven't the time then tell your office girl or your wife to write for you. It is quite essential that our members recognize our advertisers, patronize them and reciprocate business with them. Your Journal solicits your assistance.

YE WHIRLING CHAIR

Our esteemed editor has instituted a new feature under the caption of the "Editor's Easy Chair." There is more of a difference of relativity in the Secretary's chair which is ever whirling, sans foot rest, slippers or pipe. May and June furnished plenty of whirls and some spiral glides.

The legislature wind-up created some intense situations with interviews, trips to Lansing, Detroit and Washington terminating with a deep sigh when the governor handed us that veto.

The four weeks post-graduate course and the two-day clinic in Detroit entailed a lot of correspondence to secure speakers and perfect local arrangements.

The Executive Committee held a prolonged session covering many important subjects.

Securing of auditoriums in Jackson and deciding on local arrangements for our annual meeting in September consumed more time. Incidentally the Jackson meeting is going to be an outstanding one. The Jackson members will be found to be most delightful hosts. Note the dates—September 17, 18, 19th.

All members who were delinquent in their 1929 dues received a letter reminding them how they could not afford to continue their delinquency.

Section Officers and Chairmen of Standing Committees were advised when their programs and reports were to be filed for publication.

Several flagrant violations of our medical practice laws were investigated and placed in the hands of state police.

Preparation of programs and arrangements for our summer Post-Graduate Conferences was undertaken.

Visits were made to two county societies and to one hospital fund drive public meeting.

The routine correspondence was of usual amount with many interesting inquiries for information answered.

Our A. M. A. delegates were furnished their credentials and as speaker the difficult task of selecting the right persons for the Ten Reference Committees of the A. M. A. House of Delegates and the Speaker's Remarks was completed.

The Chair was still whirling on June 15th, as this is being written with two weeks of the month to go and three days of engagements to be filled. Since the season opened participation has been had in but one 18-hole contest and two nine-hole sessions—net loss, two balls and 80 cents.

Will someone please send in some oil to lubricate the whirling chair?

LEGISLATION

In the June issue the members were given a general story of the last session of the Legislature. The Legislative Commission will tender a formal report with recommendations at our annual meeting in September. The profession and the people of Michigan are indebted to Governor Green for his judgment in exercising his veto powers. We are also indebted to Dr. Ray Lyman Wilbur for the following communication:

May 13, 1929.

My Dear Governor Green:

For many years I have closely followed the development of American medical education, having been dean of a medical school and president of the Association of American Medical Colleges. During these years we have earnestly endeavored to bring medicine under the control of the universities, since degardless of the method of treatment, scientific medicine requires training in laboratories under the control of great scientific men. The proper laboratories are so expensive that only through state support or large endowment can a physician be given proper training for the care of the sick. There has also been a constant effort to make this work more effective by

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choice of subjects and by stopping the simple multiplication of hours that made up the former curriculum before scientific training had become so important.

I note that in your state, even in the presence of your outstanding state supported University of Michigan Medical School, there is an effort being made to pass legislation permitting those belonging to a single type of treatment to have equal privileges in the care of the sick with those who have conformed to Class A Medical School training.

It seems to be particularly important in holding up standards of scientific education that within a single state with a great medical school under its charge, only one standard for the complete care of the sick should be permitted. I know of your wide interest in the protection of the public and trust that your influence will be on the side of those who have made the maximum effort to prepare themselves for the giving of proper and adequate medical care. There may be a place for the practice of various forms of treatment in a state, but it certainly should not be alongside of those trained at a state university.

Very sincerely yours,

Ray Lyman Wilbur.

MINUTES OF THE EXECUTIVE COMMITTEE OF THE MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council met at the Pantlind Hotel, Grand Rapids, at 6:00 p. m. June 6, 1929.

Present: R. C. Stone, Chairman; J. D. Bruce; G. L. LeFevre; B. R. Corbus; L. J. Hirschman, President; R. R. Smith, Vice President; F. C. Warnshuis, Secretary.

1. Dr. Kiefer, Chairman of the Legislative Commission, made an extended report upon the activities of the Commission during the last session of the Legislature. He also, together with the Secretary, imparted a proposition tendered by a representative individual in connection with our legislative needs. On motion of Dr. Corbus-LeFevre, the preliminary report of the Legislative Commission was accepted and the proposition referred to was tabled until the September meeting of the Council. No definite action being taken at this time.

2. Upon motion of Dr. LeFevre-Bruce, the expenses and bills incurred by the activties of the Legislative Commission to the amount of $1,000 were approved and ordered paid.

3. The Secretary gave an extended report of the arrangements that have been tentatively made for the holding of our annual meeting in Jackson. On motion of LeFevre-Bruce, the arrangements were approved and the Secretary directed to execute same preparatory to the annual meeting.

4. On motion of Hirschman-Bruce, the first general session is to be conducted in a public auditorium in Jackson and is to be made a semi-public meeting to which the citizens of Jackson are invited.

5. On motion of Corbus-LeFevre, the Secretary was directed to inform the Jackson local committee on arrangements that no formal entertainment was desired and that if they plan any entertainment it should be an informal affair following the adjournment of the House of Delegates.

6. On motion of Bruce-Corbus, the Secretary was directed to arrange for a commercial exhibit.

7. Upon motion of Corbus-LeFevre, the Secretary was directed to arrange for a scientific exhibit and to select some competent pathologist to be chairman of this scientific exhibit and to solicit the placing of exhibits by hospitals and by members.

8. On motion of Corbus-Bruce, the Secretary was directed to appropriate $200 in prizes to be awarded at the discretion of an award committee to be appointed by the President for the best exhibit placed in this new department of our annual meeting.

9. Upon motion of Corbus-Bruce, the President was requested to solicit the interest of the Couzens Foundation in our orthopedic and pediatric post-graduate activities.

10. On motion of Bruce-Corbus, $100 was appropriated for prizes that have been offered by the Joint Committee on Public Health Education for prize essays.

11. On motion of Corbus-Bruce, the Secretary was instructed to arrange the following Post-Graduate Conferences: Escanaba, Houghton, Sault Ste. Marie, Cadillac, Ludington. These to be conducted during the months of July and August and and the other conferences pledged for other Councilor Districts to be arranged for after the holding of the annual meeting.

The meeting adjourned at 10:30 p. m.

F. C. Warnshuis, Secretary.

UPPER PENINSULA SOCIETY

The Upper Peninsula Medical Society will hold its annual session in Ironwood, August 7 and 8. A cordial welcome awaits any member. The following program should include a large attendance:

PROGRAM

Wednesday, August Seventh

10:00 to 12:00 a. m.—Registration at Memorial Building.

1:00 p. m.—Official Opening.

Dr. A. J. O'Brien, President Gogebic County Medical Society.

Invocation—The Rev. Donald S. West, Ironwood.

Address of Welcome—Mayor John A. Landers, Ironwood.

President's Address—

Dr. H. E. Perry, Newberry, President Upper Peninsula Medical Society.

"Treatment of Fractures"

Dr. C. W. Hopkins, Chicago, Illinois.

"The Physician's Library"

Dr. A. Fischer, Hancock, Michigan.

"The Early Diagnosis of Exophthalmic Goiter"

Dr. Samuel F. Haines, Rochester, Minnesota.

"Injection of Varices and Ulcers of the Lower Extremities"

Dr. J. J. Walch, Escanaba, Michigan.

"Modern Methods of Treatment of Benign Prostatic Obstruction"

Dr. Verne C. Hunt, Rochester, Minnesota.

6:30 p. m.—Banquet for members and visiting physicians and their ladies.

8:00 p. m.—Public Meeting—

"Patent Medicine and the Public Health"

Dr. A. J. Cramp, Chicago, Illinois.

9:30 p. m.—Dance for members and visiting physicians and their ladies.

Thursday, August Eighth

8:30 a. m.—

"Forceps and Episiotomy"

Dr. E. L. Cornell, Chicago, Illinois.

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"Treatment of Diabetes Mellitus"
Dr. Arthur C. Curtis, Ann Arbor, Michigan.
"Focal Infection from the Standpoint of the Proctologist"
Dr. Louis J. Hirschman, Detroit, Michigan.
"Infections of the Hand"
Dr. S. L. Koch, Chicago, Illinois.
"Personal Experiences with Pituitrin"
Dr. W. L. Maccani, Ironwood, Michigan.
Business Meeting with Election of Officers.
2:00 p. m.—Golf tournament at Country Club.

The meetings will be held at the Memorial building.

Members and visiting physicians are urgently invited to bring their ladies for whom a special program of entertainment has been arranged.

MECOSTA COUNTY

The May meeting of the Mecosta County Medical Society was held at the Western Hotel, Big Rapids, Michigan, Tuesday evening, May 7, 1929.

Sixteen members of the Society partook of the dinner in honor of Dr. Edward D. Spalding of Detroit. Dr. D. MacIntyre and Dr. Thomas P. Treynor were hosts to the Society.

Following a brief business session, Dr. Treynor introduced the principal speaker, Dr. Edward D. Spalding, who addressed the Society on the subject of "Modern Cardiac Therapy." In a masterly fashion, Dr. Spalding presented his subject, limiting his remarks to the more usual types of Cardiac disease. Classifying these various types for treatment into groups based on etiology.

The discussion which followed was participated in by most of those present, revealing a very general interest in the speaker's subject.

The meeting adjourned, following a rising vote of thanks to Dr. Spalding.

D. MacIntyre, Secretary.

LENAWEE COUNTY

The regular May meeting of the Lenawee County Medical Society was held at the Tea Room of Mrs. Adam Kohl in Hudson, on the evening of May 16th. Eighteen members were present besides Dr. Yeagley and Dr. Johnson of the Hillsdale County Society, and a druggist and dentist from Hudson.

After an excellent chicken dinner, the meeting was called to order by President Marsh. Dr. Griswold of the Michigan Department of Health was first introduced and fully explained the plan of the full time County Health Officer as recommended by the department. Dr. Griswold made it very clear that there is no other method of public health control that can compare in effectiveness with this plan, citing the experience of the control of disease at the time of the Mississippi flood. Also that if the plan is carried out under the scrutiny of the State Health Department, they will pay $2,000 and the Rockefeller Foundation will pay $3,000 per annum of the estimated cost of $10,000 a year. On motion of Dr. Stafford, seconded by Dr. Hammel, the Society voted to go on record as favoring the plan as outlined by Dr. Griswold. Plans are on foot for a joint meeting in the fall of this Society and the Board of Supervisors, with the Welfare Committees of the luncheon clubs of the county, at which the County Health Officer plan will be discussed.

Following this discussion, Dr. Walter J. Wilson of Detroit was introduced, and he spoke to us on "Diagnosis of Heart Lesions," with especial reference to electrocardiography. This talk, while informal, was very illuminating, and covered the ground rather fully in a short time.

Motion by Dr. Whitney that the Society send a letter of condolence to Dr. Crile on account of the accident at the Cleveland Clinic. Carried. Dr. Whitney and Dr. Westgate were appointed on the committee.

C. H. Westgate, Secretary.

JACKSON COUNTY

The May meeting was held at the Hayes Hotel, May 21st, 1929. Dinner was served at 7:00 o'clock, following which the meeting was called to order by President Hungerford.

The minutes of the previous meeting were approved as published in the Bulletin. President Hungerford then spoke a few words of welcome to the members of the Michigan Second District Dental Society, who were there as our guests.

Dr. Neal of Albion, president of the Dental Society, responded and said that he would like to see more joint meetings held. Dr. Hungerford then turned the meeting over to the chairman of the day, Dr. Brown.

Dr. Brown introduced as speaker of the day Dr. R. L. Kahn, Director of Laboratories, University of Michigan. Dr. Kahn was formerly connected with the Michigan State Laboratories at Lansing.

Dr. Kahn gave a very interesting talk on the League of Nations Conference on Sero-diagnosis of Syphillis and his various travels through Europe. He had some very interesting lantern slide charts, which very clearly depicted the superiority of the contest in the diagnosis of syphilis as well as the comparative ease with which the test may be run.

There was some discussion of the paper by a number of the doctors present.

Dr. Leahy announced that the annual picnic would be held June 20 in conjunction with the Washtenaw County Society at the Jackson Country Club.

The meeting then adjourned. Attendance, 69.

SHIAWASSEE COUNTY

The April meeting of the Shiawassee County Medical Society was held in Owosso at Memorial Hospital at a noon luncheon. Fifteen doctors were present and were addressed by Doctors W. H. Snyder and Frank Ficklin, of Toledo, the former's topic being "Foreign Bodies in the Eye," and the latter's "General Surgical Indications in Traumatic Surgery." The May meeting was held at the same place and hour, and was addressed by Dr. R. S. Breakey, of Ann Arbor, who spoke on "Pyelography." Resolutions on the deaths of Doctors Colin McCormick and S. S. C. Phippen, both of Owosso, were read. Dr. P. E. Marsh, of Bancroft, was made a member of the Society at this meeting. The June meeting, held at Memorial Hospital June 13th, was addressed by Dr. E. R. Van der Slice, of Lansing, subject, "Diagnosis of Tuberculosis in Children." Seventeen physicians were present at this meeting. In Shiawassee county noon luncheon meetings are proving most practicable.

OAKLAND COUNTY

Golfers belonging to the Oakland County Medical Society will contest annually for a handsome trophy, which will be presented by Dr. Harvey Chapman, according to an announcement made by the donor at the monthly dinner meeting Thursday in Rochester.

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The cup will go each year to the low net score in the annual tournament which will be figured on the basis of the card turned in, less each member's card handicap. The trophy will be in the possession of the winner for one year and will eventually become the permanent property of the member holding it at the time of Dr. Chapman's death.

During the afternoon members of the society inspected the Parkadle farm, owned by Parke, Davis & Co., near Rochester. The session Thursday closed the monthly scientific meetings during the summer. In July and August the physicians will have meetings of a social nature, Dr. C. A. Neafie, secretary, announced.

THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

INSULIN—For the general practitioner. A treatise intended to aid the practitioner who has not the advantages of a full laboratory and consultant service. By George H. Wood, M. D. Second and revised edition. Frederick Stearns and Company, pharmaceutical manufacturers, Detroit, Michigan, 1929.

This little work was first published two years ago. The present is a second edition. It contains a considerable amount of information on the subject of insulin and answers the questions that would naturally arise in the mind of the general practitioner who is not devoting the major portion of his time to the treatment of diabetes. Such subjects as, "Beginning the Use of Insulin, "Standard Diets," "Complications of Diabetes," "Laboratory Tests," are dealt with in a very interesting way. While this little book bears the imprint of a well known pharmaceutical company it does not carry any advertising matter. It is for free distribution to members of the medical profession who are interested in the subject.

HISTORY OF BLOCKLEY—A history of the Philadelphia General Hospital from its inception, 1731-1928. Compiled by John Welsh Croskey, M. D., Philadelphia, Pa. Illustrated with 15 halftone plates. F. A. Davis Company, publishers, Philadelphia, Pa., 1929. Price $10.00.

This history of the Philadelphia General Hospital covers a period of approximately two hundred years. It is a pioneer institution and as such is of more than local interest. This new book contains over 700 pages, a great portion of which is valuable data for the medical historian.

HANDBOOK OF PHYSIOLOGY—W. D. Halliburton, M. D., LL. D., F. R. C. P., F. R. C. S., Emeritus Professor of Physiology, King's College, London, and R. J. S. McDowall, M. B., D. Sc., F. R. C. P. (Edin.) Dean of the Faculty of Medicine and Professor of Physiology, King's College, London. Eighteenth Edition. Contains over five hundred illustrations in the text, many of which are colored, and three colored plates. P. Blackiston's Son & Co., Philadelphia, Pa., 1929.

This edition has been completely revised and reset. The sections on the "Autonomic Nervous System," "Speech," "The Control of the Circulation," "The Carriage of the Carbon Dioxide," the "Maintenance of Body Neutrality," "Vitamins," "Ductless Glands," and "Intermediate Metabolism," are for the most part new. The section on the "Nervous System" has also been practically rewritten. The history of this book is very interesting. It is a lineal descendant of Kirkes Handbook of Physiology which many of us studied during our early medical college years. The book had its birth in St. Bartholomew's Hospital, London, 81 years ago, but it has been renewing its youth ever since. By the year 1867, it had attained the sixth edition; the ninth in 1876. Professor Halliburton undertook the revision in 1896. Up to the present twenty-eighth edition 116,000 copies have been published. Owing to the fact that the book had become entirely a new one, the name Kirkes was dropped and Halliburton's Physiology became its recognized title. The work under present authorship will be found very convenient and readable. We know of no more concise and authorative handbook on the subject than the present volume.

TEXT BOOK OF CLINICAL NEUROLOGY—M. Neustaedter, M. D., Ph. D., Visiting Neurologist, Central Neurological Hospital, Welfare Island; Clinical Professor in Neurology, New York Polyclinic Medical School and Hospital; Neurologist King's County and City Hospital, etc., with introduction by Edward D. Fisher, M. D. Pp. 602, 228 illustrations. F. A. Davis & Co., Philadelphia.

A book for the student and general practitioner primarily, but of great value to the many specialties outside of the neurology. It departs from the time honored manner of etiology, pathology, symptomatology, etc., and leads off with the symptoms as given in actual occurrence in medical practice. It is a valuable contribution to medical literature and deserves a place on the reference desk of the suregon as well as physician.

THE COMPARATIVE PHYSIOLOGY OF MUSCULAR TISSUE—A. D. Ritchie, 1928. 111 pp. Macmillan Company. $3.00.

This book deals in a comprehensive yet concise manner with the chemical and physical manifestations of muscle cells. The author classes muscles into four functional groups distinguished by the amount of lactic acid produced in rigor, giving an admirable summary of recent work on various types of muscle. The lactic acid production, glycogen changes, carbon dioxide output, heat energy, work and general metabolism are well treated. A chapter is devoted to the effect of external agents (K, Ca, pH, etc.) on muscle metabolism. The various theories of muscular contraction are summarized. The work is quite readable and an index renders various points available for reference.

ANATOMY AND THE PROBLEM OF BEHAVIOR—G. E. Coghill, 1929, 113 pages. Macmillan Co., $3.00.

During the past 30 years Professor Coghill has directed his research toward an attempt to correlate the increasingly complex behavior of developing neurone pathways of the central nervous system. The results of his many studies are available for the first time, with a philosophical and not too technical background, in this work which originally formed a series of three lectures at the University of London.

His theme briefly is this. During the early pre-nervous stages in development (of the salamander) the embryonic organization is main-

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tained by differential gradients between centers of high metabolic activity. There is such a gradient in the tissue which differentiates into the central nervous system, and it is along this gradient that the nervous co-ordinating paths first differentiate. Thus the metabolic gradient as a factor in regulation and integration gives way to nervous tissue. Associated with the first differentiation of nerves is the first evidence of behavior, a simple bending of the body. As the nerve paths increase in extent the behavior becomes more complex so that the animal soon swims, seizes food, walks and reacts to various stimuli. Throughout development the behavior is affected and conditioned by the neurone pattern, a pattern which is efficient at any stage although changing throughout life. The author thus concludes that growth "is one of the means by which the nervous system performs its function in behavior" and through it the individual possesses a "creative potential for the future."

CLINICAL ELECTROCARDIOGRAMS — THEIR INTERPRETATION AND SIGNIFICANCE—Frederick A. Willius, M. D., Section on Cardiology, The Mayo Clinic, Rochester, Minnesota, and Associate Professor of Medicine, The Mayo Foundation, University of Minnesota. Quarto of 219 pages with 368 illustrations. W. B. Saunders Company, Philadelphia and London, 1929. Cloth $8.00.

Electrocardiography has, at last, come into its proper place. In early days, there was much skepticism as to its value. Today many of the skeptics are purchasing equipment. The reasons for this are not hard to find, for it gives definite information that is not otherwise available.

This fact has been brought to our attention recently by the publication of a book by Dr. F. W. Willius of the Mayo Foundation. In this book, there are numerous electrocardiograms, with explanatory data. There is no attempt at explanation of the technic nor of the general underlying principles of electrocardiography but a careful perusal of the material would convince the most unbelieving that many forms of cardiac disturbance, impossible of demonstration otherwise, are illustrated here. A large number of cases of auricular tachycardia, a number of ventricular tachycardia, a large series of grams showing T-wave changes in coronary thrombosis and other forms of myocardial disturbance, a number of series of electrocardiograms in dying hearts, make a very interesting and valuable demonstration of the efficiency of the electrocardiograph. No cases of cardiac disease can be considered to have been thoroughly worked up unless electrocardiograms have been run on the patient.

As time goes on, with more careful study of experimental material, there is no question but that many more data will be obtained, enabling us to diagnose less and lesser degrees of cardiac disfunction.

SURGICAL PATHOLOGY—William Boyd, M. D., Professor of Pathology, University of Manitoba, Winnipeg, Canada. Second edition, revised and reset. Octavo of 933 pages, with 474 illustrations and 15 colored plates. W. B. Saunders Company, Philadelphia and London, March, 1929. Cloth, $11.00 net.

In a foreword to this volume Dr. W. J. Mayo contrasts the present in pathology with the past. The pathology of the past was based upon postmortem and cadaverized specimens removed at biopsy. Today pathology deals with living things. The author of the present volume has performed his task in keeping with present day demands, with the result that he has produced a very practical book. He has observed a sense of proportion in the space allotted to each object having in view the importance of the matter treated. The usual divisions into general and special pathology have been observed; the former deals with general pathological processes; the latter concerns itself with particular regions and organs of the body. In the production of this second edition, the revision has been most thorough, several of the chapters having been entirely rewritten. The surgeon will find this work a valuable desk companion.

RECENT ADVANCES IN BACTERIOLOGY AND THE STUDY OF THE INFECTIONS—Henry J. Dible, M. B. M. R. C. P., Professor of Pathology and Bacteriology in the Welsh National Medical School. Published by P. Blackiston's Son and Company, Philadelphia, Pa., 1929.

This little book is one of the series entitled, "The Recent Advance Series," designed to give the up-to-date knowledge along the several lines. Here we have a review of the most recent changes in the subject and the indications showing the lives upon which it is developing.

EDEMA AND ITS TREATMENT—Herman Elwyn, M. D., Assistant Visiting Physician Gouveneur Hospital, New York. The MacMillan Company, New York Price $2.50. 1929.

This monograph is an explanation of the causation of edema. The author disagrees with attempted explanations based on the viewpoint of the local, chemical and physical forces involved. He explains that a physico chemical system alone cannot be made to explain the formation of edema. "We are not dealing with chemical reagents in a test tube which must react in the same manner if the conditions remain the same." "We are dealing," says the author, "with a physiological organism in which there are always adaptive regulatory mechanisms which have been developed phylogenetically." Among the subjects discussed are, "The Water Content of the Body;" "The Water Content of the Cell;" "The Water Deposits of the Body," and "The Role of the Kidneys in the Water Exchange." After a discussion of the physiological process the writer goes on to explain the formation of edema in its various phases including the edema of cardiac failure, of glomerulonephritis, of lipoid nephritis, of chronic under nutrition, and lastly, the treatment of edema. The work contains a bibliography consisting of 193 titles. It is recommended to the medical profession as embodying a very valuable and painstaking research on a subject that should appeal to every member of the profession.

DIAGNOSTIC METHODS IN INTERNAL MEDICINE—Samuel A. Loewenberg, M. D., F. A. C. P., Assistant Professor of Clinical Medicine, Jefferson Medical College. With 547 illustrations, some in colors. F. A. Davis, publishers, Philadelphia, Pa. Price $10.00.

This is an entirely new work on the subject, and may be taken to represent the most recent methods in diagnosis and internal medicine. While the work is intended for the "general practitioner" the author very wisely maintains that everyone, even those who practice a specialty, should be presumed to possess the wide varied experience which is the possession of the conscientious man in general practice. The viewpoint of the book is "the person affected by an illness," rather than the "illness affecting a person." The reviewer quite agrees that because of the interrelation of all parts and organs of the body no one part or organ alone can be treated successfully unless proper consideration is given to the organism as a whole. This book is therefore also commended

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to the specialist. The author gives instructions on the various methods of examining patients and discusses in minute detail the respiratory and cardiac systems. Considerable, though less space, is given to the digestive system, the nervous system and the genito-urinary system. There is a splendid chapter on laboratory interpretations. The chapter on Radiology is one that should be welcomed particularly by all who do not confine their attention to X-ray, inasmuch as it gives a very good idea of the scope and limitations of this branch of diagnosis. The illustrations are for the most part reproductions of photographs. There are a number of line drawings as well as diagramatic illustrations. The publishers are to be congratulated on the appearance of the work from a typographical viewpoint. It is well indexed so as to make it an easy as well as valuable work of reference.

THE MEDICAL CLINICS OF NORTH AMERICA—Volume 12, Number 5, Southern Interurban Clinical Club Number. Published bi-monthly (six numbers a year) by W. B. Saunders Co., Philadelphia and London. March, 1929.

This well known volume contains 23 contributions from the leading members of the Southern Interurban Clinical Club. The volume opens with the clinic of Dr. C. C. Bass of New Orleans on the subject of Pellagra, dealing with many symptoms and lesions of the disease which are rarely discovered until late. Thyroid deficiency as a cause of poor health by Dr. James S. McLester of Birmingham, Alabama, is of especial interest and well written. The clinics of Dr. Paul H. Ringer on the problem of collapse therapy and Pulmonary Tuberculosis, is of especial interest at this time because of the newer surgical treatment of the disease which is being discussed. This is a cross section of the many interesting clinics treated by leading authorities in the south.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMESTRY OF THE AMERCIL ON PHARMACY AND CHEMISTRY OF THE AMERpostpaid, $1.00. Pp. 75. Chicago: American Medical Association, 1929.

This book is a great deal more than a mere record of the negative actions of the Council on Pharmacy and Chemistry. It gives in full reasons for the Council's rejection of various preparations, but it also records results of the Council's investigations of new medicinal agents not yet out of the experimental stage, and frequently contains reports on general questions concerned with the advance of rational drug therapy. All three categories of reports are represented in the present volume.

Among the reports on products that have been denied admission to New and Nonofficial Remedies are those on Sanarthrit and Telatuten, two preparations of animal tissue, of indefinite composition, proposed for use in arthritis and arteriosclerosis respectively; on Clauden, a combination of lipoids an dundefined proteins, proposed for use as a hemostatic; on Hart's Alimentary Elixir of Beef, a liquid medicinal food, "fortified" with glycerophosphates; on Alucol, claimed to be colloidal aluminum hydroxide and marketed under this nondescriptive name; on Oxo-Ate and Oxo-Ate B, claimed to be the ammonium and calcium salts, respectively, of orthoiodoxybenzoic acid and marketed under these proprietary, nondescriptive names; on Terpezone, stated to be pinene ozonide and marketed with exaggerated and unwarranted claims; on Vitalipon, an unscientific and indefinite mixture of lipoids claimed to be extracted from "vegetable and animal embryonic organs"; on Kalak Water, a solution containing sodium bicarbonate with many other ingredients of questionable utility, marketed under a non-descriptive name with unwarranted therapeutic claims; on Eu-Med, Aerosan Tablets, and Thyangol Pastilles, three shotgun mixtures from Germany.

Among the preliminary reports are those on Metrazol, which has now been admitted to New and Nonofficial Remedies; on Phenylaminoethanol sulphate, a newly synthesized ephedrine substitute; on Ovarialhormon Folliculin Menformon, the ovarian preparation originated by Dr. Laqueur of Amsterdam; and on Heparmone, a liver preparation.

The special report dealing with dextrose solutions containing cresol and intended for intravenous administration is a noteworthy example of the third category of Council reports we have mentioned.

NEW AND NONOFFICIAL REMEDIES, 1929—Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1929. Cloth. Price, postpaid, $1.50. Pp. 488; xlviii. Chicago: American Medical Association.

This book offers a solution to the problem of the busy physician who is daily importuned by "detail" men to try the thousand and one new preparations brought out by enterprising manufacturers of pharmaceuticals. If the preparation in question is not described in New and Nonofficial Remedies, it is quite safe to refuse to try it no matter how alluring the salesman's talk. The book contains descriptions of those new preparations which, after painstaking examination, the Council on Pharmacy and Chemistry has found worthy of recognition and of trial by the medical profession. It is revised each year to bring it up to date with the best medical thought and to include the new preparations that have been recognized during the year as well as to delete those which have been found not to live up to their promise of therapeutic value.

In this edition there appears for the first time an article on liver preparations and their therapeutic use. The articles on ergot, metallic peroxides, pituitary gland, and radium and radium salts have been considerably revised. Among the new preparations which have been included in this edition are: diphtheria toxoid, which is the toxin of diphtheria so modified by treatment with formaldehyde as greatly to reduce its toxicity yet preserving its antitoxic power; metrazol, another proposed substitute for camphor; liver extract No. 343 and concentrated liver extract-Armour, for the treatment of pernicious anemia. Other newly accepted articles are: bismuth sodium tartrate-Searle, another water soluble bismuth tartrate preparation; scarlet fever totxin-P. D. & Co., another scarlet fever toxin manufactured under lease of the Scarlet Fever Commission; parathyroid harmone-Squibb, standardized by the method of J. B. Collip, and paroidin, made and standardized by the method of A. M. Hanson, both being solutions of the active principle or principles of parathyroid gland for appropriate clinical use. An important deletion is the omission of all generators charged with radium.

A new departure in this edition is a list of "exempted" articles. This comprises some hundred and thirty medicinal and non-medicinal products examined by the Council and found to be of such composition and to be so marketed as not to require acceptance or rejection by the Council under its rules.

A section of the book (brought up to date each

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year) gives references to proprietary articles not included in New and Nonofficial Remedies. This list, in conjunction with the book proper constitutes a cumulative index of proprietary medicines, which physicians may consult when a proprietary product is brought to their attention. Physicians cannot dispense with the use of the newer remedies that are brought out each year; yet they can neither judge them on the basis of the manufacturers' claims nor have they the time or means to determine their merits for themselves. For this reason, every physician should possess a copy of this volume, which annually puts at his disposal an authoritative, up to date, and unbiased estimate of these preparations.

PROCTOLOGY—A treatise on the malformations, injuries and diseases of the rectum, anus and pelvic colon. Frank C. Yeomans, A. B., M. D., F. A. C. S., Professor of Proctology, New York Polyclinic Medical School; Fellow and Past President, American Proctologic Society; Attending Surgeon, New York Cancer Institute; Proctologist, the New York Hospital. With 417 illustrations and 4 colored plates. Cloth $12, net. D. Appleton & Co., New York.

Recognizing the growing importance of proctology as a specialty, Yeomans has produced a work which will assist materially in increasing the interest of every practitioner of medicine in this splendid field. From his large and varied experiences in large metropolitan clinics, as well as in private practice, he has presented a fund of information of great value.

He has drawn freely upon the work of Tuttle and other authors whenever necessary to make his work complete. The illustrations are clear and many of them original. The non-operative treatment of many of the minor diseases is detailed and the operative technic well described. It is a welcome and valuable addition to the library of any one who wishes to keep up to date in the specialty of proctology.

MENTAL HANDICAPS IN GOLF—Theo. B. Hyslop, M. D., F. R. S. E. Member of the Medical Golfing Society, Late Senior Physician to Bethlehem Royal Hospital. 112 pages, Pocket size edition. Baillere, Tindall & Cox, London, Eng. Williams & Wilkins Co., Baltimore, 1927.

This book is a psychotherapy for the golfer whose chief hazards are his mental handicaps. It is written after the fashion of classical medical writers, medical nomenclature being used freely and effectively. It sets forth in very readable, amusing style rational and prejudicial convictions gathered from a medical golf "fan's" life-long struggle with the game. The doctor's experiences enriched by his dry English humor combine to render a very entertaining bit of reading. If you golf, this book may improve your game; it should improve your temper.

SUSCEPTIBILITY IMPORTANT IN DEVELOPMENT OF CANCER

Susceptibility is probably an important factor in cancer and increased susceptibility of the race to the cause or causes of cancer may account for the statistical increase in the disease, suggests Dr. William J. Mayo in the American Journal of Surgery. Recent observations and investigations made by himself and other scientists have confirmed Dr. Mayo's belief in the importance of this factor in the development of cancer.

"One factor of supreme importance which has not been sufficiently stressed is that individuals vary in their susceptibility to the cause or causes of cancer, whatever they may be," Dr. Mayo writes. "In no other way can we explain why 90 per cent of persons do not have cancerous disease, and why 10 per cent of them die from it." Dr. Mayo reasons that it is as logical to suppose that the 90 per cent have greater resistance to cancer as to try to explain why only 10 per cent came in contact with supposed causative agents. Dr. Mayo offered as a probable explanation that when sources of chronic irritation exist, the tissues involved try to heal the breach of continuity by normal cells, but if the irritation is long continued the tissues are not able to develop normal cells for the purpose, "and cells that are more and more immature are rushed to the rescue." In persons who are susceptible the cells "continue an unlimited functionless division."

"The assumption has always been," Dr. Mayo says, after discussing various theories recently put forward, "that the more severe grades of cancer are due to a more potent cause. I need hardly point out that these newer revelations throw some doubt on so ready an explanation. It is equally if not more probable that the more severe forms of cancer and the development of cancer in certain tissues are due to increased susceptibility. . . . Because of natural immunity to the disease, relatively only a small portion of the total population is susceptible to scarlet fever. With the Dick test the degree of natural immunity of the individual to scarlet fever can be determined, and if it is not sufficient to protect from the disease, it can be increased to normal by serum. Why not in cancer? Perhaps the development of cancer as well as its degree of malignancy is attributable to the diminished activity of immunizing processes rather than to the nature of the activating agent."—Science Service.

POTASSIUM PERMANGANATE IN THE TREATMENT OF PNEUMONIA*

The British Medical Journal of March 7th, 1925, reported the first known cases of pneumonia successfully treated by potassium permanganate, Dr. Herbert W. Nott of Birkenhead, England, having been responsible for the therapeutic experiment. The patients received standard solutions of the drug as retained enemas, recovered promptly, and convalesced more satisfactorily than by more orthodox methods. Later, Dr. Nelson J. Roche of Southsea, England, obtained equally satisfactory results with similar injections, which he reported in the same publication on March 12th, 1927. There is apparently no record of exposition of the drug for pneumonic conditions in American medical literature.

Becoming cognizant of the original experiments in England, Dr. John L. Chester of Detroit, treated an advanced and seemingly hopeless one of flu-pneumonia of tuberculous origin, which had failed to respond to other methods of treatment; was given 4 ounces of a standard solution of potassium premanganate every 3 hours, rectally, at Providence Hospital. The patient recovered with more celerity and less fatiguing effort than is customary in such circumstances. Through the co-operation of various Detroit physicians, an additional 23 cases of lobar and broncho pneumonia were thereafter subjected to the same treatment, also at Providence Hospital, with consistently good results, and but two deaths.

Under very adverse conditions at Eloise Hospital, through the courtesy of the superintendent

* Abstract of original article appearing in The Annals of Internal Medicine, published by The American College of Physicians. Vol. 2, No. 11, May, 1929.

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and his staff, 20 cases of pneumonia were selected at random. All were severe and complicated, some with chronic heart conditions of long standing, and nearly all admitted chronic alcoholics. Ten of these cases were handled by other than the potassium permanganate method, and all died. The remaining 10 received appropriate doses of a standard solution of the drug, with the result that there were 50 per cent recoveries in what was considered well-nigh hopeless circumstances.

Is potassium permanganate a specific in pneumonia? A remedy that can consistently accomplish the following results. Lower temperature and pulse rate, and produce slower and deeper respirations, in a few hours; banish cyanosis, restlessness and sleeplessness, and ease cough and sputum, in 24 hours; obtain a normal temperature, pulse rate and respiration, in from 48 to 72 hours; render a patient fit to be discharged in a shorter time than would have been believed possible under any other regime—would seem to have all the earmarks of true specific action on the micro-organisms of pneumonia.

X-RAYS IMPORTANT FOR DETECTING EARLY TUBERCULOSIS

The X-ray is a valuable aid in protecting children from the ravages and dangers of tuberculosis, because by means of the X-ray, tuberculosis lesions, or injuries to tissues, may be discovered before the clinical symptoms, such as fever and fatigue, set in, declared Dr. F. Maurice McPhedran of the University of Pennsylvania, addressing the meeting of the National Tuberculosis Association in Atlantic City.

"Elevation of temperature and of pulse, malaise and fatigue are, properly speaking, late effects, coarse indices of activity," stated Dr. McPhedran. "The most reliable criterion we have of the activity of any lesion, whether latent or not, is the changes in the size and number of spots constituting its shadow on the X-ray film." In Dr. McPhedran's opinion the X-ray has a double value, first for detecting the disease in its very early stages when treatment is much the most successful, and second for determining the progress of the disease or its arrest by treatment.

The early stage of tuberculosis, known as the latent period, during which damage is being done to tissues without outward sign or warning, is a characteristic of tuberculosis of the lungs in children and adolescents, Dr. McPhedran pointed out. It is during this stage that treatment should be begun, because in children once the clinical symptoms have developed, the disease rapidly progresses to the stage of irreparable damage or to fatal ending.—Science Service.

FIND TUBERCULOSIS GERM MAY OCCUR IN TWO FORMS

Tuberculosis germs grown artificially may play strange tricks on scientists by occurring in two forms, one being comparatively harmless and the other being very virulent, Dr. S. A. Petroff of Trudeau, N. Y., reported to the National Tuberculosis Association at the opening session of its 25th annual meeting at Atlantic City.

Scientists who grow disease germs on a synthetic diet instead of human tissues and cells, favored by the germs, have known that some of the germs so grown appear in two forms, but this is the first knowledge that the germ of tuberculosis plays a dual role. Heretofore the tubercle bacillus, as it is called in scientific circles, has been considered one of the most stable of germs.

The two forms differ in other particulars besides virulency, but this difference is found in the bacillus of human, bovine, and avian tuberculosis, and in the bacillus used by Prof. Calmette of the Pasteur Institute, Paris, in his famous Calmette-Guerin vaccine against tuberculosis. This unsuspected difference may account for the unsatisfactory results reported by American scientists with the B. C. G. vaccine. A vaccine made from what was supposed to be the harmless tubercle bacilli would have an unfortunate effect on the subject vaccinated if the bacilli suddenly changed to the virulent form. This change may move in either direction, that is from virulent to harmless or the reverse, and may occur either within or without the human body, Dr. Petroff reported.—Science Service.

NEW CHEMICAL PROCESSES MAY MAKE SAFE FILMS CHEAPER

In about a year the cost of photographic film with cellulose acetate base, now about one-fifth higher than the dangerous cellulose nitrate film that caused the Cleveland Clinic disaster, may be reduced so that it competes in price with the nitrocellulose variety. This is the prediction of chemists who foresee future price declines in the costs of the raw materials, acetic anhydride and acetic acid, that enter into the manufacture of the cellulose acetate film base. New methods of manufacture of acetic acid and its compounds from alcohol are likely to bring about a price reduction of acetic acid from about 14 cents to 8 cents a pound.

Higher cost of the acetate safety films has been one of the chief factors in the continued use of the explosive cellulose nitrate films for X-ray use in hospitals despite the acknowledged danger that large quantities of such films entail. Lower cost for acetate films is expected to speed their use and reduce the hazards of storage of all sorts of films, whether in hospitals or elsewhere.

Laws and regulations are likely to require in the near future that the use of the safe acetate films shall be extended to ordinary photographic negatives, commercial motion picture films, etc. The 16 millimeter cr reduced size film is already manufactured only on safety stock.—Science Service.

SCIENCE CALLS FLIES TO AID IN MEDICAL STUDIES

Flies which have long been held in bad esteem as spreaders of disease are about to do their bit in helping the human race. They are being used now for studies of the effect of X-rays on future generations. In flies, the harmful effects of these rays appear in the third and fourth generation, Dr. Mary B. Stark of New York City reported recently. She has exposed flies to X-rays for varying lengths of time. While the individuals exposed continue to grow and breed, their descendants die off. Dr. Stark believes this is because the reproductive cells of the grand-parent or great-grandparent flies were injured by the rays. This injury is inherited and finally causes death. In this same way cancer may be produced in third and fourth generations of flies. Dr. Stark believes that the experiments on flies will throw some light on this problem in human beings. Her theory is not accepted by all scientists, however. Because the human race breeds slowly, it will be some time before the inherited effects of X-rays can be noticed in man.—Science Service.

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